Astronomy & Astrophysics manuscript no. PKS2155˙astroph˙erratum
February 1, 2008

REM near-IR and optical multiband observations of PKS 2155-304 in 2005*

A. Dolcini[1], F. Farfanelli[2], S. Ciprini[2], A. Treves[1], S. Covino[3], G. Tosti[2], E. Pian[4], B. Sbarufatti[1], E. Molinari[3], G. Chincarini[3,5], F. M. Zerbi[3], G. Malaspina[3], P. Conconi[3], L. Nicastro[6], E. Palazzi[6], V. Testa[7], F. Vitali[7], L. A. Antonelli[7], J. Danziger[4], G. Tagliaferri[3], E. Meurs[8], S. Vergani[8], A. Fernandez-Soto[9], E. Distefano[10], G. Cutispoto[10], and F. D'Alessio[7]

1 Università degli Studi dell'Insubria, Dipartimento di Fisica e Matematica, via Valleggio 11, 22100 Como, Italy
2 Dipartimento di Fisica e Osservatorio Astronomico, Università di Perugia, Via. A. Pascoli, 06123 Perugia, Italy
3 INAF, Osservatorio Astronomico di Brera, via E. Bianchi 46, 23807 Merate (LC), Italy
4 INAF, Osservatorio Astronomico di Trieste, Via G. B. Tiepolo 11, 34143 Trieste, Italy
5 Università degli Studi di Milano-Bicocca, Dipartimento di Fisica, Piazza delle Scienze, 3, 20126 Milan, Italy
6 INAF/IASF Bologna, via Gobetti 101, 40129 Bologna, Italy
7 INAF, Osservatorio Astronomico di Roma, via Frascati 33, 00040 Monteporzio Catone, Italy
8 Dunsink Observatory, Castleknock, Dublin 15, Ireland
9 Observatori Astronomic, Universitat de Valencia, Aptdo. Correos 22085, Valencia 46071, Spain
10 INAF, Osservatorio Astrofisico di Catania, via S. Sofia 78, 95123 Catania, Italy

Received 29 September 2006 / Accepted 26 March 2007

Abstract

Context. Spectral variability is the main tool for constraining emission models of BL Lac objects.
Aims. By means of systematic observations of the BL Lac prototype PKS 2155-304 in the infrared-optical band, we explore variability on the scales of months, days and hours.
Methods. We made our observations with the robotic 60 cm telescope REM located at La Silla, Chile. VRIJHK filters were used.
Results. PKS 2155-304 was observed from May to December 2005. The wavelength interval explored, the total number of photometric points and the short integration time render our photometry substantially superior to previous ones for this source. On the basis of the intensity and colour we distinguish three different states of the source, each of duration of months, which include all those described in the literature. In particular, we report the highest state ever detected in the H band. The source varied by a factor of 4 in this band, much more than in the V band (a factor ≈ 2). The source softened with increasing intensity, contrary to the general pattern observed in the UV-X-ray bands. On five nights of November we had nearly continuous monitoring for 2-3 hours. A variability episode with a time scale of $\tau \approx 24$ h is well documented, a much more rapid flare with τ=1-2 h, is also apparent, but is supported by relatively few points.
Conclusions. The overall spectral energy distribution of PKS 2155-304 is commonly described by a synchrotron-self-Compton model. The optical infrared emission is however in excess of the expectation of the model, in its original formulation. This can be explained by a variation of the frequency of the synchrotron peak, which is not unprecedented in BL Lacs.

Key words. galaxies: active - galaxies: BL Lacertae objects: PKS 2155-304

1. Introduction

PKS 2155-304 (z=0.116, Falomo et al. 1991) is a prototype of high frequency peaked BL Lac objects. It has been observed in the entire electromagnetic spectrum, from radio to TeV gamma-rays. It was the target of several multifrequency campaigns, the main scope of which was to study the variability of the spectral energy distribution (SED), in order to constrain emission models.

In particular we refer to the 1991 and 1994 campaigns involving IUE, ROSAT, ASCA, EUVE and ground based telescopes (see Edelson et al. 1995, Urry et al. 1997, and references therein). There were noticeable differences in source behaviour between these two epochs. While in 1991 the multiwavelength variability was almost achromatic, and the X-ray variation led that in the UV by a couple of hours, in 1994 the variability was more pronounced in X-rays than in UV-optical, with a lag of the latter

* This paper is the corrected version astroph 0704.0265 published in A&A 469 503. It contains the material in the "Errata Corrrige", in press in A&A.

Period of observation	Nights of observation	Number of photometric points	Total exposure time
May	6	129	14520 s
September	8	159	18080 s
October	3	102	11590 s
November	21	1581	173540 s
December	6	64	7030 s

Table 1. Outline of observations accomplished in 2005.

by two days. The general pattern was that of a hardening of the spectrum with increasing intensity. More recently Zhang et al. (2006b) studied a large set of data covering the period 2000-2005 obtained with the XMM-Newton satellite, which allowed a direct comparison of the X-ray and UV-optical band, the latter deriving from the Optical Monitor on board the satellite. The complexity of the variability pattern is confirmed. Some episodes of achromatic variation were detected, but a general tendency of increasing variability amplitude with increasing frequency, and spectral hardening with increasing intensity was found.

Optical photometry has been performed by several groups in several occasions (see e.g. Miller et al. (1983), Smith et al. (1992), Xie et al. (1996), Paltani et al. (1997), Pesce et al. (1997), Fan & Lin (2000), Tommasi et al. (2001) and references therein). All this material is rather fragmented, consisting of few hours of observations during few nights. The difficulty of a systematic observing campaign covering many nights is partly overcome by the possibility of observing using remotely guided or robotic telescopes.

The REM telescope, originally designed for a prompt detection of gamma ray bursts (see Molinari et al. (2006)), is particularly apt for photometric studies of BL Lacs (see also the previous results for PKS 0537-441 by Dolcini et al. 2005, and for 3C 454.3 by Fuhrmann et al. 2006) and, being located at La Silla (Chile), it is ideally fit to study PKS 2155-304.

We report on extensive and intensive photometric campaign performed in 2005 in the V, R, I, J, H, K bands. For the total number of photometric points, for the time resolution (minutes) and spectral range this campaign seems to supersede all the IR-optical photometric material presented thus far.

2. REM, Photometric procedure, data analysis

2.1. REM

The Rapid Eye Mount (REM) Telescope is a 60 cm fully robotic instrument. It has two cameras fed at the same time by a dichroic filter that allows the telescope to observe in the NIR (z', J, H, K) as well as optical (I, R, V). Further information on the REM project may be found in Zerbi et al. (2001), Chincarini et al. (2003) and Covino et al. (2004).

2.2. Observations and data analysis

REM observed the PKS 2155-304 field during May, September, October, November and December 2005 in VRIH bands. Only during three nights in September the telescope observed also in J and K filters. To allow intranight and short time-scale variability monitoring, very intensive observations (2-3 h, quasi-continuously) were made during five of the nights in November. An outline of the observations is reported in Table 1, while the complete log is only available in Table A.1 (see Appendix A): we report for each photometric point the band, the epoch, the integration time, the intensity and its uncertainty. Typical integration times are $\leq$100 s and statistical uncertainties are always $\leq$ 10% and $\leq$ 3% in the highest state (November 2005, see following).

Reduction of the REM NIR and optical frames followed standard procedures. Photometric analysis of the frames was done using the GAIA[1] and DAOPHOT packages (Stetson 1986). Relative calibration was obtained by calculating magnitude shifts relative to three bright isolated stars in the field, indicated by A, B, C in Fig. 1 (image taken from ESO Digitized Sky Survey[2]).

The NIR frames were calibrated using the magnitudes of the A, B and C stars as reported in the 2MASS catalogue[3]. For the optical, we exposed on 2006 June 29 the standard field G156-31 (Landolt, 1992), and immediately after this the PKS 2155-304 field. We calculated the zero points which were then used to calibrate all of our data. The observed magnitudes in the REM filters for the reference objects A, B, and C are reported in Table 2. We have monitored the relative intensities of the A, B, C reference stars during the entire observation period, and we have detected no indication of variability within 0.1 mag (error on the average $\leq$0.01 mag).

1 http://star-www.dur.ac.uk/ pdraper/gaia/gaia.html
2 http://archive.eso.org/dss/dss
3 http://irsa.ipac.caltech.edu

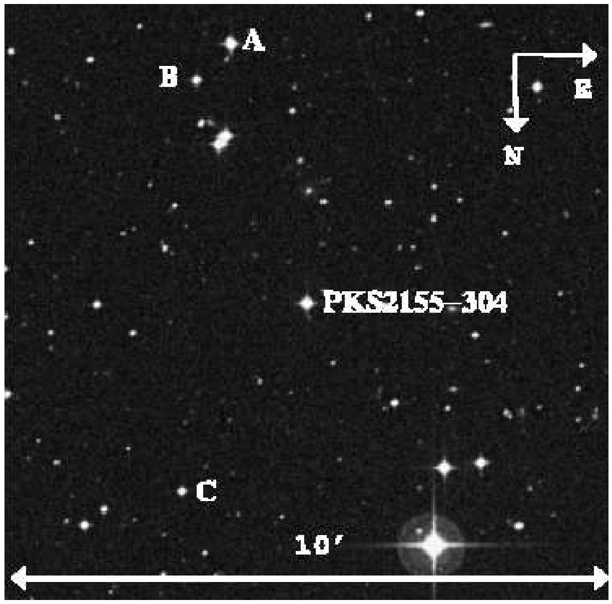

Figure 1. PKS2155-304 field (DSS-1 survey). Letters indicate stars used for calibration.

	A	**B**	**C**
RA	21:58:46.505	21:58:43.807	21:58:42.337
DEC	-30:17:51.29	-30:17:15.71	-30:10:27.41
K	11.171±0.024	12.475±0.030	12.648±0.024
H	11.182±0.027	12.556±0.026	12.769±0.027
J	11.510±0.027	12.838±0.026	13.091±0.029
I	12.184±0.005	13.421±0.009	13.216±0.006
R	12.981±0.004	13.434±0.006	13.671±0.010
V	13.179±0.005	13.822±0.009	13.899±0.013

Table 2. Coordinates, IR and optical magnitudes for the reference stars.

Note that we found significant deviations from the optical calibrations provided by the finding charts for AGN of the Heidelberg University[4] (Hamuy & Maza, 1989). In particular the star C is also used as a calibrator by these authors and our optical zeropoint differs by about 0.3 mag from theirs.

Relative and absolute calibration errors have been added in quadrature to the photometric error derived from the procedure.

3. Results

3.1. Long term variability

In this section we report the results of the long term photometric analysis. The light curves in the H, R, I, V filters are given in Fig. 2.

The intensity is normalized with respect to the average over the entire observation period. These averages are given in Table 3. It is immediately apparent that the total variability range is very different in the various filters, being a factor ≈ 4 in H and a factor ≈ 2 in V (see Table 3) . The shapes of the light curves are similar in the various filters. A flare-like structure is apparent in all filters at t ≈ 680 (first days of November). The ratio between the V- and H-band fluxes, designated as V/H, is reported in Fig. 3. In order not to introduce spurious effects due to small time scale variability, the V/H ratio has been computed for pairs of V and H measurements spaced apart in time by no more than 10 minutes.

It seems that there are two main colour states: the source softens rather abruptly, in response to the November flare. On the basis of the light curve and the colour curve we divide the observations in three epochs: **1** 500-525, **2** 640-660, **3** 670-725, expressed in MJD[5].

[4] http://www.lsw.uni-heidelberg.de/projects/extragalactic/charts/2155-304.html

[5] For the Modified Julian Date we use the convention MJD=JD-2,453,000.5

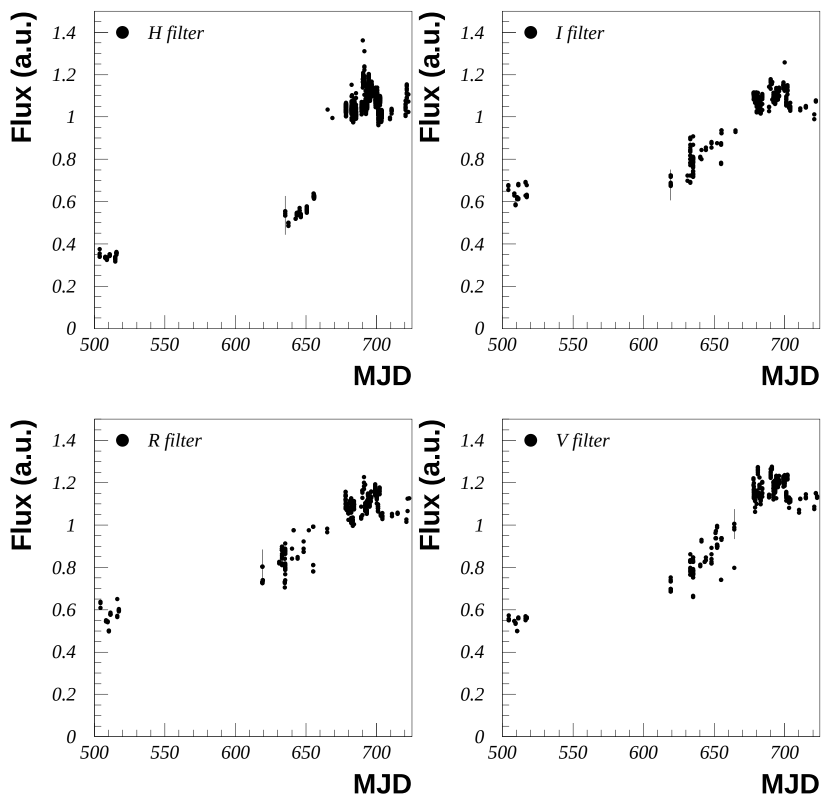

Figure 2. Normalized light curves of PKS 2155-304. Flux is reported in arbitrary unit (a. u.). In each boxes a typical error bar is plotted.

Filter	H	I	R	V
Average	114.9±3.3	34.45±6.5	30.89±5.13	30.70±5.05
Max value	156.5	46.4	38.3	37.4
Min value	36.5	19.1	16.2	16.2
Average ep.1	39.3±1.4	21.4±1.5	18.7±1.3	18.1±0.7
Average ep.2	65.9±5.2	28.4±3.3	27.2±2.5	20.3±3.4
Average ep.3	122.9±6.1	38.8±1.9	34.1±1.5	33.5±1.7

Table 3. Average intensities for all epochs and all filters. All data are in mJy units. **Epoch 1** corresponds to May 2005 observations, **epoch 2** to September-October 2005 observations and **epoch 3** to November-December 2005 observations.

3.2. Short time-scale variability

We report in Fig. 4 the light curves for five nights in November 2005, when the observations were more intensive. All the nights belong to epoch **3**, corresponding to the high state of the source.

The mean intensity and the 1-sigma values for each night are given in Table 4.

A χ^2 analysis indicates that in each night the significance of variability is very high, but for the nights of Nov 4 and Nov 18 for the H band and Nov 19 for the V band. In the box of Nov 4 - V band we also report the photometry of a comparison star which illustrates directly the significance of the source variability. Though the shapes of intensity curves are different (see Fig. 4), there is a rather regular colour-intensity dependence (see Fig. 5) indicating harder states for higher intensities.

We adopt the usual definition of time scale variability $\tau = \frac{1}{1+z}\frac{<f>}{df/dt}$. Following Montagni et al. (2006), a variability time scale is taken as reliable if the light curve can be approximated with a linear dependence, and it contains at least 10 points. In particular this gives a time scale of ≈ 24 h for the November 4 night (Fig. 4, V band - Nov 4 box). The simultaneous H light curve does not show any regular variability. We note that on November 8 in the H curve there is a flare-like event. If one connects 4 points

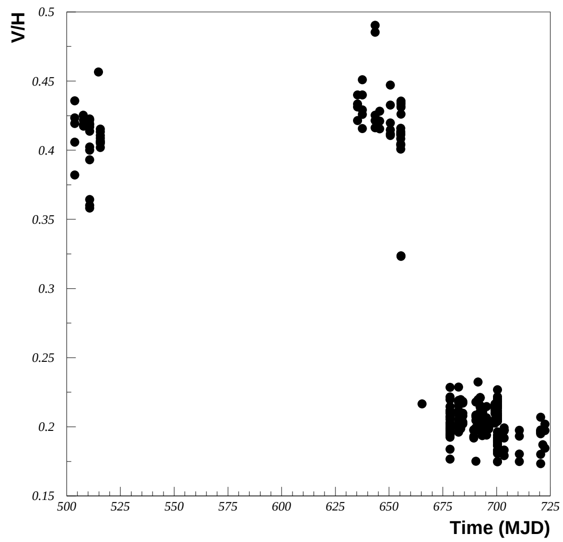

Figure 3. V/H flux ratio evolution during 2005. Error bars are comparable with symbol size.

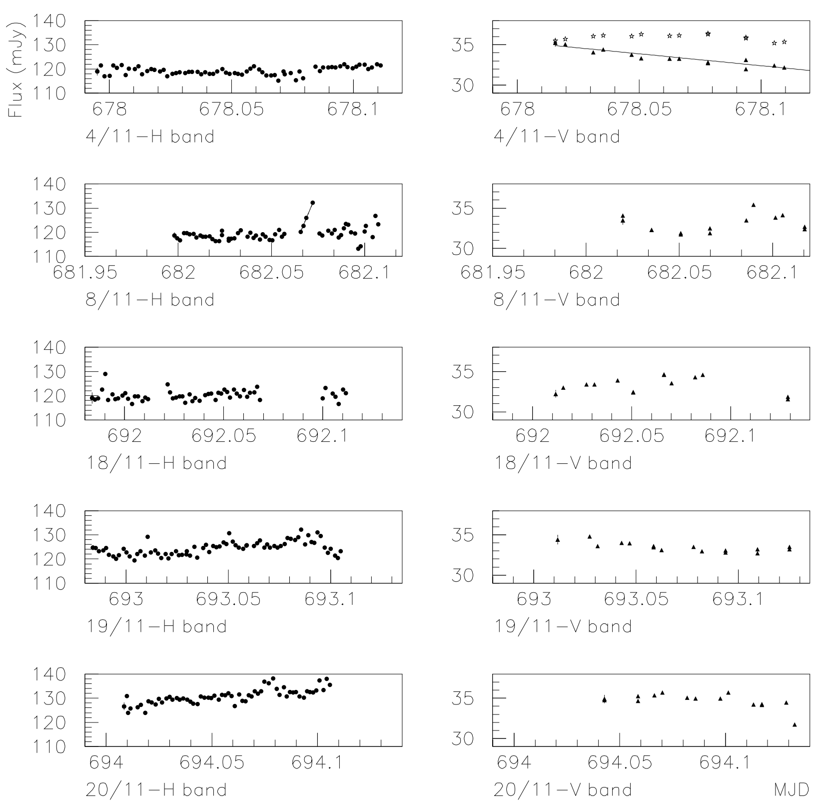

Figure 4. Light curves in the H and V filters for five nigths in November 2005, when the observations were more intensive. Dates of observations are reported in each box. The solid line in V band - 4 Nov box results from a linear regression analysis. The solid line in H band - 8 Nov box connects the four points of the flare-like structure. In each box it is given a typical error bar. In V band - 4 Nov box the light curve of one comparison star is also plotted, with a fixed enhancement of 9 mJy.

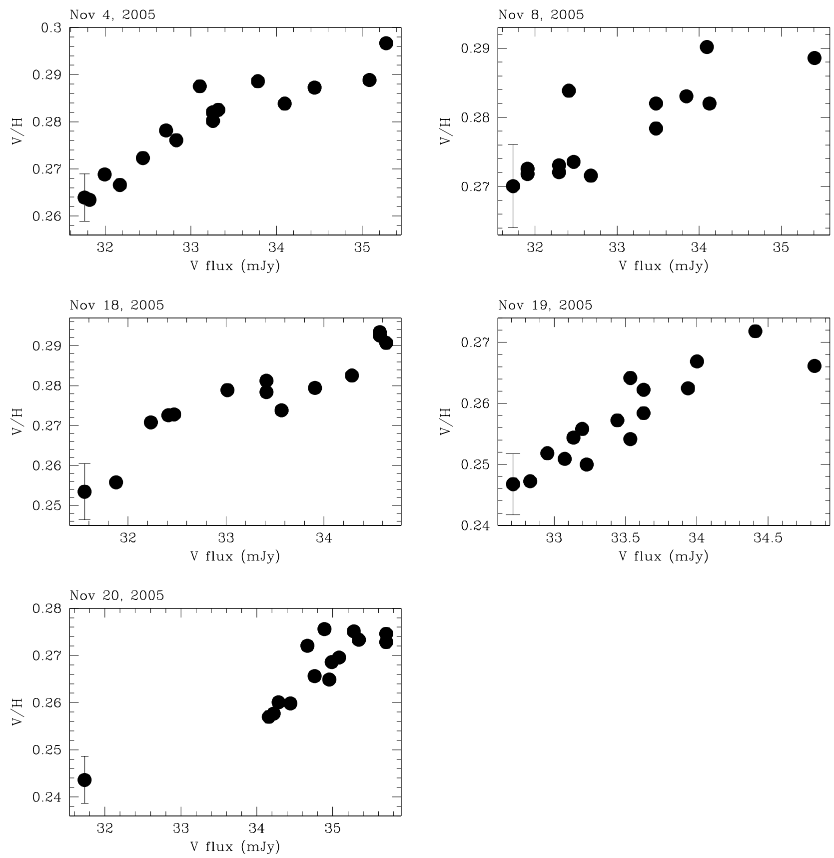

Figure 5. V/H flux ratio versus intensity for the five more intensively observed nights of epoch **3**. In each box a typical error bar is plotted.

Night	**4/11**	**8/11**	**18/11**	**19/11**	**20/11**
Average H	119.3±1.7	119.3±3.0	120.4±2.1	124.5±2.8	130.8±3.0
Average I	39.1±0.6	36.4±0.5	38.7±0.6	38.7±0.6	38.3±0.7
Average R	38.5±0.8	36.40±.8	37.3±0.5	38.0±1.6	37.1±0.5
Average V	33.2±1.1	33.0±1.1	33.4±1.1	33.5±1.1	34.7±0.1

Table 4. Average intensities and 1-sigma values for all filters for all five nights with more intensive observations in November 2005. All values are in mJy units.

as suggested in Fig. 4 H band - Nov 8 box, the time scale variability is as short as 1.5 h. Unfortunately the V light curve is too sparse to confirm the presence of the flare also in this band.

3.3. The NIR-Optical spectral energy distribution

We had six filter coverage (K,H,J,I,R,V) during three nights of Sept. 2005 (epoch **2**) and representative SEDs for these nights are reported in Fig. 6.

The delays between exposures in the different filters are less than 20 minutes. Reddening corrections are less than 6% in V and have been neglected. A fit with a single power law yields $\alpha \approx 0.9$ and it is clearly not good. The main deviation derives from the J filter, exceeding substantially our photometric precision of about 10%. An improvement in the fit is obtained by using a broken power law with spectral indices $\alpha \approx 0.4$ for the IR data and $\alpha \approx 0.9$ for the optical data.

For comparison, we report in Fig. 7 the SED of June 29, 2006, exposure used for calibration purpose: its profile is rather similar to that of Sept. 2005.

At the other epochs the SED consists of 4 points (H, I, R, V), and in Figs. 8 and 10 we give representative examples of SEDs acquired on epoch **1** and **3**. The time differences between observations at various filters are less than 20 minutes.

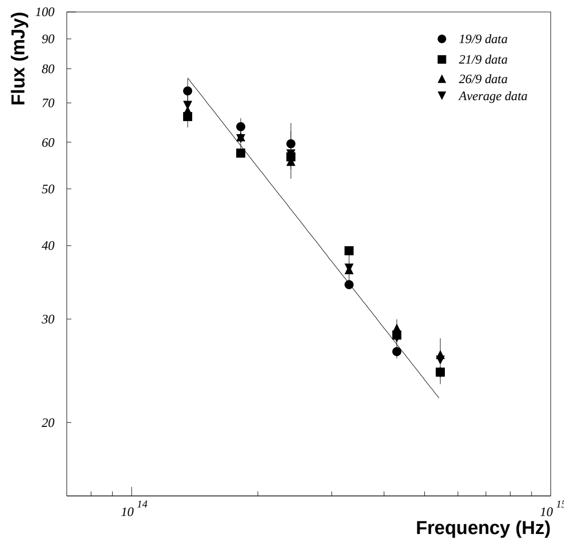

Figure 6. September 2005 spectra for observations including the K and J filters. The spectral fit on average data with a single power law yields a spectral index α=0.91±0.07.

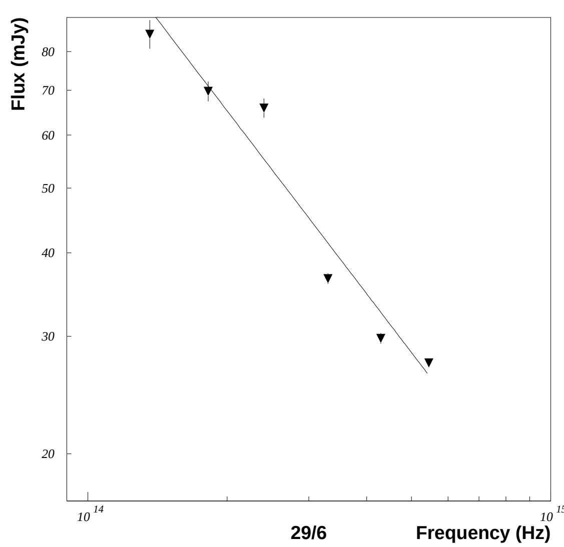

Figure 7. 29 June 2006 spectrum. The spectral fit with a single power law yields a spectral index α=0.90±0.16.

In Fig. 8, which refers to a low state, we report also the estimated contribution of the host galaxy, which was calculated adopting the H magnitude of the galaxy measured by Kotilainen et al. (1998) and the Mannucci at al. (2001) template spectrum for giant ellipticals. It is apparent that the contribution of the galaxy never exceeds 20% of the BL Lac signal. At the other epochs the contribution from galaxy is negligible and it is not relevant for explaining the excess in J with respect a single power law noted above. The epoch **2** photometry (Fig. 9) is compared with spectrophotometry obtained with the ESO 3.6m telescope by R. Falomo[6] on July 25, 2001 (Sbarufatti et al. (2006)). The source was found in a similar, but somewhat lower brightness state and some deviations from a power law are apparent. The HRIV points at epoch **3** (Fig. 10) are roughly fitted by a single power law of α ≈1.3. In any case the comparison of the SEDs at the three epochs clearly indicate a softening with increasing intensity.

6 spectrum available at the ZBLLAC online library, http://www.oapd.inaf.it/zbllac

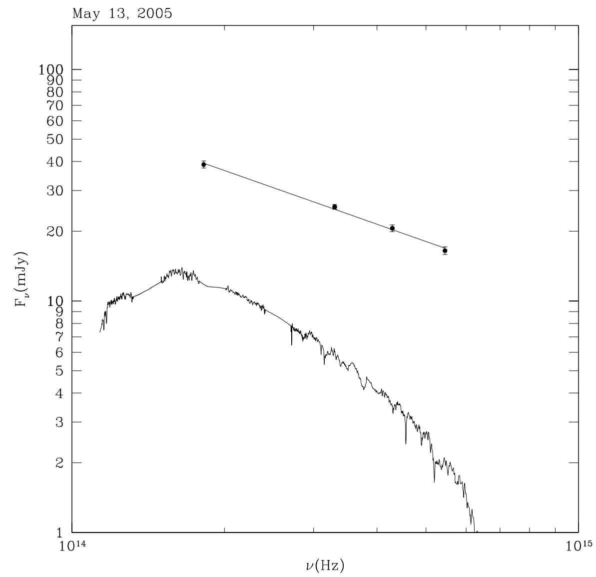

Figure 8. 13 May 2005 spectrum - epoch 1. We report also the spectrum of the host galaxy (see text). The spectral fit with a single power law yields a spectral index α=0.77±0.16.

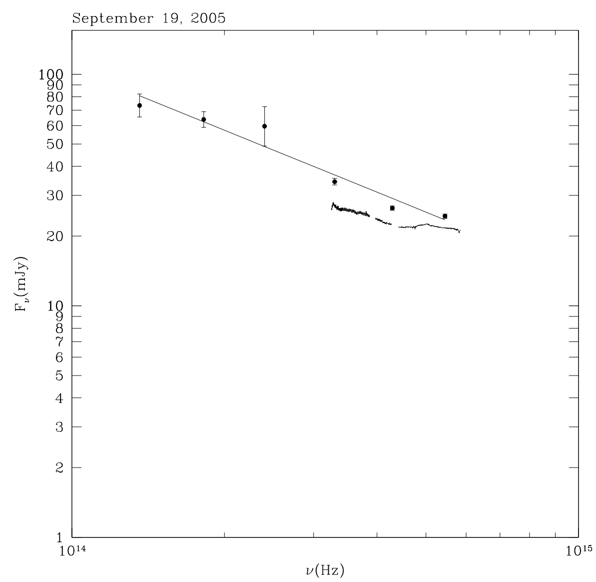

Figure 9. 19 September 2005 spectrum - epoch 2. For comparison we report the ESO 3.6m telescope spectrophotometry which correspond to a slightly lower state of the source. The spectral fit with a single power law yields a spectral index α=0.88±0.05.

4. Discussion

A collection of near-IR/optical SEDs of PKS2155-304 obtained by various authors at different epochs is presented in Fig. 11 and in Table 5. Our data encompass all those reported in the literature.

In the historical observations of PKS2155-304 the delays between exposures at different filters are typically of the order of hours, instead of about 10 minutes as in our data set. Comparing literature data with our data it is apparent that the maximum we observed on 20 November 2005 in the H filter light curve is the highest state ever reported in this band. Note that the V state was comparable with states reported in the literature, likely because the coverage of the source in the optical band is less sparse than that in the NIR. A most noticeable result of our photometry is the discovery of long term H-band variability, the amplitude of which is much larger than that in the optical.

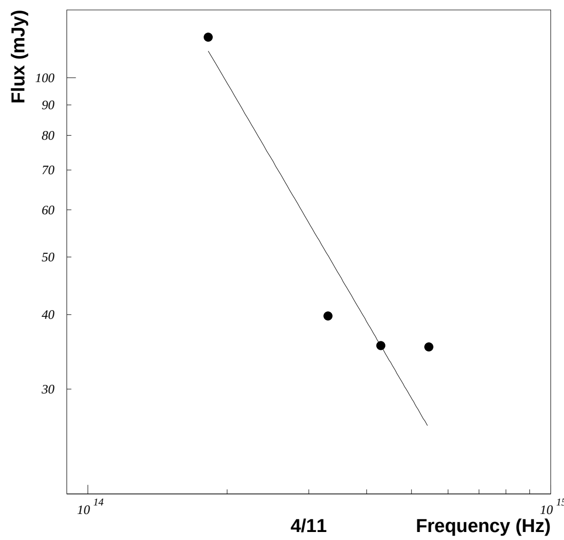

Figure 10. 4 November 2005 spectrum - epoch 3. The spectral fit with a single power law yields a spectral index α=1.32±0.25. Error bars are comparable with symbols size.

Data set	α	V (mJy)
This work (13/5/2005)	0.77±0.16	16.485±0.263
This work (19/9/2005)	0.88±0.05	24.370±0.238
This work (4/11/2005)	1.32±0.24	35.278±0.498
Bertone at al. (2000)	0.42±0.26	26.20±0.58
Pesce et al. (1997)	0.62±0.30	24.50±0.67
Zhang & Xie (1996)	0.62±0.16	22.90±0.63
Bersanelli et al. (1992)	0.61±0.38	51.88±1.56 (J band)
Treves et al. (1989) (1/12/1983)	0.51±0.31	19.80±0.36
Treves et al. (1989) (11/11/1984)	0.51±0.41	26.20±0.48
Miller & McAlister (1983)	0.62±0.56	17.8

Table 5. Spectral index values and V values for all spectra plotted in Fig. 11. α vs V plot is reported in Fig. 12.

In Fig. 12 we plot the spectral index vs the V magnitude, as reported in table 5. There is no apparent correlation. It is noticeable however that the highest state in all bands (our observation of Nov 2005) corresponds to a rather soft spectral shape. This contrasts with the usual source behaviour of hardening with increasing intensity, as found in the UV-X-ray band (see Introduction). It contrasts also with the short time scale variability, as reported in section 3.2.

There is a general consensus that the blazar SED can be explained by the superposition of a synchrotron component, and an inverse Compton one due either to scattering off the synchrotron photons (synchrotron-self Compton, SSC), or to external photons like those of the broad line region or of a thermal disk (e.g. Tavecchio et al. 1998, Katarzynski et al. 2005). This results in a typical two-maxima shape of the blazar SED. In Fig. 13 we report examples of the SED modeling proposed for PKS 2155-304, on the basis of data taken in 1997. The models are detailed in Chiappetti et al. (1999). The object is a typical HBL, with the synchrotron peak in the soft X-rays.

A well known critical point of this model, is that the source size is essentially constrained by variability, and variability itself requires that the SED is constructed using simultaneous observations in all bands. A further step of the modelling consists in identifying the physical origin of the relativistic jet and of its variability, see e.g. Katarzynski & Ghisellini (2006). With this premise it is obvious that the optical-IR photometric study, non simultaneous with that in other regions of the SED, has only a limited relevance in clarifying the overall picture. However we would like to make some remarks. If the SSC models reported in Fig. 13 truly represent the behaviour of the SED in 1997, as suggested by the good match with the X-ray and TeV energy data, and if our 2005 optical-IR spectra are also due to the SSC mechanism, then the latter represent a different condition in the jet and point to different critical parameters within the SSC scenario. While the IR-optical spectrum in May 2005 (triangles) has the same shape as predicted in 1997, but different normalization, the November 2005 IR-optical spectrum is different in both

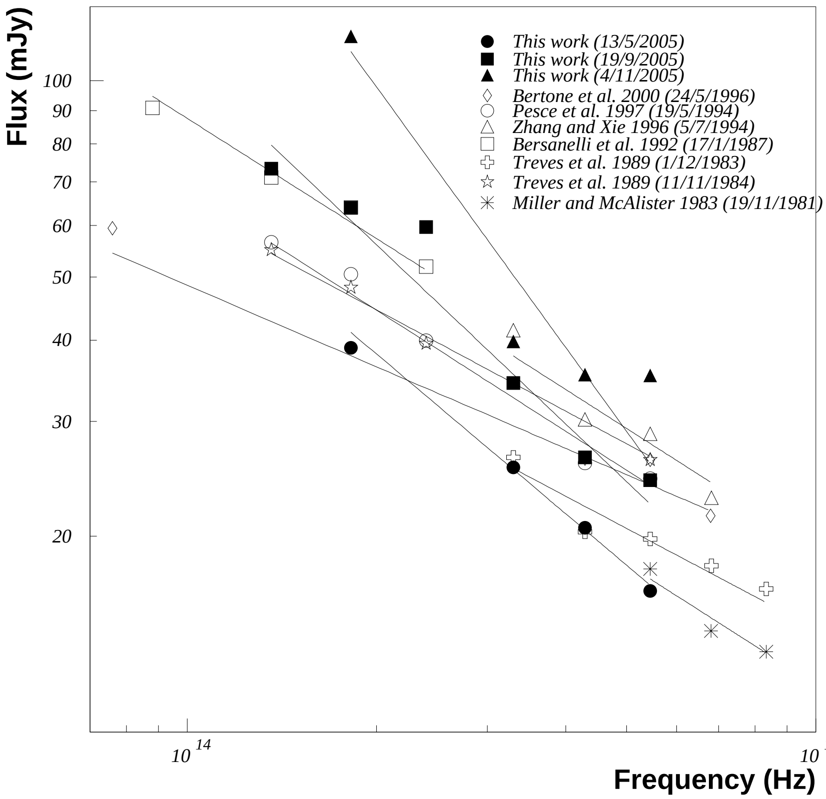

Figure 11. Different spectra of PKS2155-304 from observations at other epochs reported in the literature. Symbols correspond to following works: filled circles: this work (13/5/2005 data), filled squares: this work (19/9/2005 data), filled up triangles: this work (4/11/2005 data), open diamonds: Bertone et al. (2000; 24/5/1996 data), open circles: Pesce et al. (1997; 19/5/1994 data, the Hamuy & Maza (1989) calibration is used), open up triangles: Zhang and Xie (1996; 5/7/1994 data), open squares: Bersanelli et al. (1992; 17/1/1987 data), open crosses: Treves et al. (1989; 1/12/1983 data), open stars: Treves et al. (1989; 11/11/1984 data), asterisks: Miller and McAlister (1983; 19/11/1981 data). Spectral index values and V magnitudes for all data sets are reported in Table 5.

shape and normalization. The May 2005 observation suggests that the synchrotron peak may be located at a frequency similar to the one observed in 1997 (approximately between extreme UV and soft X-rays), the total energy being somewhat higher (about a factor 2, see Figure 13) than observed in 1997. The slope of the November 2005 spectrum suggests instead a much lower synchrotron peak energy, around the IR-optical domain or even redward, i.e. about 2-3 orders of magnitude lower than observed in 1997 and inferred in May 2005. While a variation of the synchrotron peak energy of this amplitude and on this time scale (the September 2005 slope is intermediate between those of May and November 2005, suggesting a monotonic change) it is not unprecedented in blazars (Mkn501 exhibited a similar variation in a much more rapid time scale, Pian et al. 1998), this would be the first observation of this kind in PKS 2155-304. Therefore, our interpretation is only tentative, although supported by the large observed IR variability.

Alternatively, in order to explain the optical-IR flux excess we observe in 2005 with respect to the SSC prediction based on the earlier multiwavelength data (Fig. 13), one could invoke a thermal component, possibly from hot dust associated with the "dusty torus" surrounding the central region of the active nucleus, as suggested in the cases of other blazars with excess in the optical-infrared band (De Diego et al. 1997, for blazar 3C 66A; Pian et al. 1999 for 3C 279; Pian et al. 2002, 2006, for blazar PKS 0537-441). However, this seems somewhat less likely, because high emission states, as observed by us, are expected to be dominated by non-thermal beamed relativistic radiation.

The continuation of this and other similar optical-IR studies, which have been proven to be promising but do not provide enough information for a physical interpretation of the data, requires that the observations are extended to other wavelengths. Simultaneous observations over a large wavelength range is the only tool to provide the necessary information for a physical interpretationof the observed variability of blazars. REM monitorings of the kind reported here could be an effective trigger to

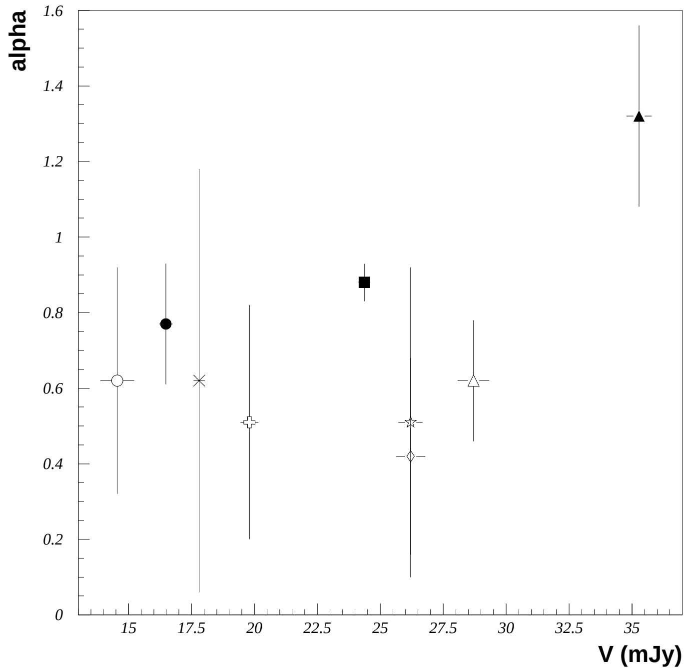

Figure 12. α vs V plot for data reported in Fig. 11. Symbols are the same as used in Fig. 11.

X-ray satellites, and programs along these lines are foreseen with SWIFT. Cross correlation procedures, which up to now have been limited mainly to the X-ray band (Zhang et al. 2005, 2006a, 2006b, Sembay et al. 2002, Edelson et al. 1995), would be extended to a much larger portion of the SED.

Appendix A: Table of observations

Filter	Epoch (MJD)	Integr time s	Intensity mJy	Sigma
K	633.4872	120	73.993	3.640
K	633.4966	120	73.345	3.640
K	633.5012	120	73.382	2.938
K	633.5094	120	76.417	1.043
K	633.5254	120	72.309	2.698
K	635.4835	120	70.598	2.579
K	635.6612	120	66.373	2.810
K	635.6670	120	67.794	2.548
K	635.6736	120	67.857	2.096
K	635.6794	120	69.182	2.758
K	635.6832	120	66.987	2.263
K	639.8339	120	67.982	0.689
K	639.8355	120	67.345	0.702
H	503.7708	120	38.943	3.048
H	503.7723	120	39.412	2.977
H	503.7741	120	38.907	2.903
H	503.8028	120	40.628	3.180
H	503.8043	120	43.135	7.497
H	507.7738	120	38.373	0.314
H	507.7753	120	38.302	0.314
H	507.7839	120	38.692	0.317
H	507.7854	120	38.586	0.316

H	507.7873	120	38.835	0.601
H	507.7881	120	38.871	0.318
H	508.7487	120	37.881	1.999
H	508.7501	120	37.224	2.168
H	508.7516	120	37.771	2.127
H	508.7531	120	38.444	1.924
H	508.7549	120	37.847	1.146
H	508.7565	120	37.396	1.786
H	510.6465	120	39.339	2.005
H	510.7174	120	39.850	1.559
H	510.7192	120	39.557	1.584
H	510.7208	120	39.594	1.513
H	510.7229	120	40.274	1.466
H	510.7244	120	40.071	1.240
H	510.7379	120	39.484	1.258
H	510.7394	120	39.740	1.555
H	510.7413	120	39.960	1.382
H	510.7427	120	39.412	1.399
H	510.7448	120	40.219	2.635
H	510.7463	120	40.256	1.246
H	514.7073	120	38.799	1.271
H	514.7089	120	38.056	1.247
H	514.7107	120	38.515	1.297
H	514.7122	120	38.267	1.741
H	514.7143	120	37.881	1.379
H	514.7156	120	38.887	1.415
H	514.7068	120	37.881	2.448
H	514.7710	120	37.812	1.342
H	514.7734	120	37.259	1.288
H	514.7749	120	36.478	1.162
H	515.6989	120	40.929	2.272
H	515.7003	120	40.108	2.117
H	515.7022	120	40.966	2.833
H	515.7037	120	41.155	2.210
H	515.7085	120	40.703	3.926
H	515.7086	120	41.422	2.149
H	515.7091	120	41.042	2.316
H	515.7106	120	41.117	2.320
H	515.7124	120	41.498	2.266
H	515.7139	120	40.816	2.117
H	635.3400	120	61.436	2.148
H	635.3489	120	63.801	0.405
H	635.3552	120	63.566	0.794
H	635.3648	120	62.349	0.855
H	637.5426	120	57.494	0.952
H	637.5481	120	57.334	1.721
H	637.5502	120	57.230	1.591
H	637.5619	120	55.928	1.162
H	637.5779	120	55.671	1.427
H	642.6039	120	59.597	1.427
H	642.6054	120	59.597	1.394
H	643.4546	120	61.267	0.902
H	643.4561	120	61.948	0.509
H	643.4581	120	62.119	1.031
H	643.4596	120	62.925	1.627
H	643.4607	120	61.663	0.741
H	643.4631	120	62.607	0.992
H	645.5581	120	64.095	1.014

H	645.5622	120	65.528	1.049
H	645.5641	120	64.036	1.104
H	645.5655	120	63.860	2.105
H	646.4435	120	60.873	2.048
H	646.4464	120	60.817	2.036
H	646.4490	120	60.482	2.044
H	646.4510	120	60.705	3.685
H	646.4521	120	62.291	2.194
H	646.4536	120	61.834	3.389
H	650.5509	120	64.213	2.708
H	650.5524	120	66.134	2.500
H	650.5537	120	64.036	3.012
H	650.5552	120	62.810	5.245
H	650.5571	120	65.047	3.372
H	650.5586	120	64.629	2.247
H	650.5606	120	63.449	2.176
H	650.5621	120	65.770	2.425
H	650.5641	120	66.256	2.454
H	650.5709	120	64.808	4.160
H	650.5743	120	64.692	2.418
H	655.3672	120	73.253	2.759
H	655.3688	120	72.048	1.800
H	655.3708	120	71.322	1.508
H	655.3716	120	71.916	1.493
H	655.3741	120	71.718	1.505
H	655.3756	120	73.312	1.762
H	655.3772	120	71.454	1.996
H	655.3787	120	71.257	1.886
H	655.5449	120	71.652	1.500
H	655.5464	120	71.652	1.695
H	655.5481	120	70.474	1.475
H	655.5496	120	70.799	1.482
H	655.5515	120	71.191	1.490
H	655.5530	120	71.718	1.501
H	655.5548	120	72.115	1.641
H	655.5563	120	71.718	1.566
H	655.5581	120	72.381	2.305
H	655.5596	120	72.448	1.516
H	655.5615	120	71.536	1.562
H	655.5630	120	71.060	1.552
H	655.5648	120	71.652	1.565
H	655.5663	120	71.454	1.561
H	655.5681	120	71.119	1.620
H	655.5696	120	70.799	2.577
H	665.3660	120	118.912	3.138
H	678.3451	120	121.458	1.503
H	678.3466	120	116.957	1.524
H	678.3480	120	117.173	1.628
H	678.3501	120	121.458	1.687
H	678.3516	120	120.455	1.491
H	678.3531	120	121.570	1.689
H	678.3551	120	117.497	1.821
H	678.3566	120	120.123	3.080
H	678.3581	120	119.902	1.562
H	678.3604	120	121.123	2.447
H	678.3619	120	117.822	1.971
H	678.3634	120	119.131	1.601
H	678.3656	120	120.012	1.932

H	678.3671	120	119.571	1.661
H	678.3685	120	119.022	2.584
H	678.3707	120	119.681	1.927
H	678.3723	120	117.065	1.885
H	678.3738	120	117.931	1.460
H	678.3759	120	118.366	1.500
H	678.3774	120	118.584	1.593
H	678.3788	120	118.366	1.767
H	678.3811	120	118.803	1.506
H	678.3826	120	118.803	1.470
H	678.3840	120	118.803	1.470
H	678.3862	120	117.822	1.493
H	678.3877	120	118.693	2.064
H	678.3892	120	117.931	1.760
H	678.3911	120	117.931	1.638
H	678.3926	120	119.022	1.653
H	678.3942	120	119.902	1.790
H	678.3963	120	118.475	1.466
H	678.3978	120	118.039	1.461
H	678.3993	120	118.257	1.765
H	678.4014	120	118.039	1.461
H	678.4028	120	117.605	1.968
H	678.4043	120	118.912	1.472
H	678.4064	120	120.123	1.728
H	678.4078	120	121.123	1.499
H	678.4093	120	119.792	2.164
H	678.4114	120	118.584	2.225
H	678.4128	120	117.281	1.528
H	678.4143	120	117.281	2.457
H	678.4164	120	117.497	1.754
H	678.4178	120	115.140	1.500
H	678.4193	120	119.022	1.776
H	678.4214	120	117.822	1.535
H	678.4218	120	118.257	1.643
H	678.4244	120	115.352	1.503
H	678.4265	120	118.912	1.711
H	678.4280	120	116.098	1.437
H	678.4294	120	120.900	1.496
H	678.4346	120	119.131	1.601
H	678.4362	120	120.677	2.019
H	678.4376	120	120.677	1.494
H	678.4398	120	120.789	1.495
H	678.4412	120	120.566	3.387
H	678.4427	120	121.123	2.359
H	678.4447	120	122.019	1.891
H	678.4462	120	120.789	1.495
H	678.4476	120	120.344	2.092
H	678.4497	120	120.900	2.811
H	678.4512	120	121.794	2.372
H	678.4526	120	121.794	2.372
H	678.4546	120	120.012	2.605
H	678.4562	120	120.566	3.189
H	678.4576	120	121.906	1.693
H	678.4597	120	121.458	1.882
H	678.4612	120	122.582	2.214
H	678.4626	120	121.794	1.887
H	682.3480	120	118.693	1.260
H	682.3495	120	117.497	1.152

H	682.3510	120	116.634	3.660
H	682.3532	120	119.681	1.270
H	682.3547	120	119.681	1.270
H	682.3562	120	119.131	3.121
H	682.3583	120	119.351	1.170
H	682.3597	120	117.822	1.155
H	682.3618	120	118.693	1.163
H	682.3633	120	118.257	1.851
H	682.3647	120	118.257	1.159
H	682.3669	120	118.366	2.313
H	682.3684	120	117.173	1.192
H	682.3700	120	116.420	1.575
H	682.3721	120	116.420	1.184
H	682.3735	120	118.803	1.689
H	682.3771	120	116.527	3.454
H	682.3771	120	117.389	1.246
H	682.3785	120	117.389	1.246
H	682.3801	120	117.497	1.928
H	682.3821	120	119.681	1.329
H	682.3836	120	120.900	1.556
H	682.3735	120	120.677	1.183
H	682.3872	120	118.148	1.254
H	682.3887	120	119.902	1.175
H	682.3903	120	117.713	1.757
H	682.3917	120	118.693	1.260
H	682.3938	120	117.065	1.747
H	682.3953	120	119.131	2.328
H	682.3968	120	118.148	2.121
H	682.3989	120	116.849	2.006
H	682.4005	120	116.634	2.662
H	682.4019	120	119.131	1.693
H	682.4041	120	121.011	1.284
H	682.4055	120	118.257	2.216
H	682.4070	120	119.351	3.641
H	682.4156	120	120.234	1.547
H	682.4171	120	122.695	2.299
H	682.4186	120	125.900	3.406
H	682.4222	120	132.198	2.373
H	682.4257	120	119.571	3.235
H	682.4271	120	118.693	5.296
H	682.4305	120	120.677	4.421
H	682.4324	120	119.571	3.235
H	682.4338	120	121.011	1.284
H	682.4359	120	117.931	1.310
H	682.4374	120	118.803	1.860
H	682.4388	120	121.682	1.418
H	682.4398	120	123.488	5.620
H	682.4412	120	123.148	1.666
H	682.4427	120	120.012	4.503
H	682.4449	120	119.571	1.464
H	682.4464	120	113.143	1.319
H	682.4479	120	114.189	2.702
H	682.4500	120	120.344	1.549
H	682.4506	120	122.582	1.830
H	682.4543	120	118.039	2.596
H	682.4558	120	126.714	1.551
H	682.4573	120	123.375	7.051
H	683.3333	120	114.611	0.668

H	683.3348	120	112.312	1.052
H	683.3363	120	114.717	0.985
H	683.3385	120	112.002	0.653
H	683.3401	120	112.105	0.653
H	683.3415	120	113.560	0.662
H	683.3435	120	113.770	1.442
H	683.3451	120	113.665	0.662
H	683.3466	120	115.885	1.568
H	683.3486	120	113.770	0.809
H	683.3501	120	114.505	0.737
H	683.3516	120	113.665	0.808
H	683.3535	120	113.143	0.804
H	683.3551	120	117.605	0.685
H	683.3566	120	114.400	1.258
H	683.3585	120	115.140	0.671
H	683.3600	120	116.849	0.681
H	683.3616	120	117.065	1.005
H	683.3636	120	112.519	0.656
H	683.3651	120	115.246	0.819
H	683.3666	120	112.830	0.802
H	683.3687	120	115.034	0.818
H	683.3702	120	114.928	0.740
H	683.3717	120	113.979	1.739
H	683.3739	120	114.190	0.812
H	683.3754	120	112.934	0.727
H	683.3769	120	115.565	2.991
H	683.3795	120	112.519	1.054
H	683.3810	120	118.584	0.691
H	683.3826	120	114.400	0.736
H	683.3845	120	112.416	2.109
H	683.3860	120	115.459	0.991
H	683.3875	120	114.084	0.811
H	683.3889	120	115.034	0.740
H	683.3904	120	113.665	0.890
H	683.3920	120	116.527	0.750
H	684.3339	120	120.234	1.488
H	684.3353	120	119.681	1.662
H	684.3368	120	121.123	1.743
H	684.3389	120	119.571	1.558
H	684.3403	120	119.792	1.561
H	684.3441	120	119.681	1.662
H	684.3456	120	122.695	2.570
H	684.3470	120	123.148	1.983
H	684.3484	120	123.148	1.983
H	684.3505	120	119.792	1.929
H	684.3519	120	121.682	1.585
H	684.3541	120	120.900	1.624
H	684.3556	120	122.356	1.700
H	684.3571	120	122.356	1.514
H	684.3591	120	120.123	1.487
H	684.3606	120	120.900	1.532
H	684.3621	120	121.682	2.641
H	684.3644	120	120.789	1.945
H	684.3660	120	121.011	1.577
H	684.3674	120	121.682	3.418
H	684.3696	120	116.205	1.514
H	684.3711	120	122.244	1.698
H	684.3726	120	122.131	2.291

H	684.3748	120	122.356	1.514
H	684.3762	120	120.234	3.279
H	684.3777	120	123.034	1.653
H	684.3798	120	122.808	2.055
H	684.3813	120	123.034	1.523
H	684.3828	120	124.059	1.536
H	684.3848	120	122.808	1.767
H	684.3863	120	121.906	2.646
H	684.3878	120	124.516	2.896
H	684.3898	120	122.582	1.517
H	684.3912	120	122.019	1.639
H	684.3927	120	122.469	1.596
H	684.3948	120	124.861	1.627
H	684.3962	120	123.602	1.778
H	684.3977	120	121.123	1.808
H	685.3274	120	125.091	1.945
H	685.3289	120	121.346	1.851
H	685.3303	120	127.769	2.978
H	685.3324	120	120.123	1.803
H	685.3409	120	119.792	3.144
H	685.3424	120	116.957	2.644
H	685.3439	120	117.389	2.202
H	685.3459	120	113.770	2.201
H	685.3474	120	117.389	2.202
H	685.3489	120	114.084	2.500
H	685.3510	120	114.506	2.358
H	685.3525	120	118.803	1.888
H	685.3540	120	115.352	2.038
H	685.3561	120	115.992	1.741
H	685.3575	120	116.313	1.746
H	685.3590	120	114.295	1.715
H	685.3610	120	115.459	1.795
H	685.3625	120	117.605	2.206
H	685.3639	120	118.257	3.015
H	685.3660	120	116.527	1.778
H	685.3676	120	119.022	2.451
H	685.3690	120	115.885	2.386
H	685.3711	120	116.420	2.397
H	685.3726	120	115.671	1.838
H	685.3740	120	115.992	1.741
H	685.3761	120	116.527	1.947
H	685.3776	120	119.461	1.793
H	685.3790	120	115.246	1.979
H	685.3810	120	117.822	1.768
H	685.3825	120	114.928	2.223
H	685.3840	120	117.497	1.763
H	689.3300	120	121.682	1.856
H	689.3315	120	120.900	1.844
H	689.3330	120	119.792	1.827
H	689.3351	120	120.344	1.913
H	689.3365	120	116.205	1.995
H	689.3380	120	119.792	1.827
H	689.3401	120	118.039	1.972
H	689.3423	120	120.455	2.723
H	689.3438	120	119.461	1.858
H	689.3458	120	121.794	2.035
H	689.3473	120	119.902	2.003
H	689.3487	120	121.011	2.138

H	689.3508	120	119.681	1.861
H	689.3523	120	117.822	1.797
H	689.3537	120	117.931	1.799
H	689.3557	120	123.034	2.055
H	689.3572	120	118.912	4.965
H	689.3586	120	118.584	2.095
H	690.3843	120	135.402	1.676
H	690.3857	120	130.866	8.745
H	690.3892	120	156.468	6.088
H	690.3907	120	133.791	6.165
H	690.3922	120	132.442	1.543
H	690.3943	120	132.809	1.209
H	690.3958	120	131.712	1.072
H	690.3972	120	131.470	1.196
H	690.3994	120	134.408	1.094
H	690.4009	120	136.278	1.109
H	690.4023	120	133.668	3.077
H	690.4044	120	133.545	1.146
H	690.4059	120	136.530	1.111
H	690.4073	120	136.153	1.891
H	690.4094	120	136.781	1.499
H	690.4109	120	132.686	1.207
H	690.4124	120	133.422	1.145
H	690.4144	120	134.532	1.224
H	690.4158	120	135.278	1.393
H	690.4172	120	134.161	1.221
H	690.4193	120	135.902	2.436
H	690.4208	120	134.904	1.158
H	690.4222	120	137.666	2.020
H	690.4244	120	138.047	2.360
H	690.4259	120	133.791	1.217
H	690.4274	120	137.160	1.905
H	690.4297	120	136.404	1.171
H	690.4309	120	135.153	0.992
H	690.4324	120	138.812	1.521
H	691.3710	120	131.955	1.019
H	691.3724	120	123.148	2.555
H	691.3739	120	133.668	2.891
H	691.3760	120	135.777	2.111
H	691.3774	120	150.531	4.325
H	691.3789	120	134.285	1.639
H	691.3812	120	133.176	2.647
H	691.3827	120	135.527	1.334
H	691.3842	120	132.809	2.524
H	691.3864	120	142.176	1.193
H	691.3878	120	137.033	1.349
H	691.3893	120	134.408	1.751
H	691.3913	120	140.355	5.166
H	691.3928	120	135.527	1.766
H	691.3943	120	141.914	1.849
H	691.3964	120	135.153	1.761
H	691.3977	120	136.781	0.972
H	691.3999	120	126.948	0.980
H	692.3336	120	119.022	2.366
H	692.3351	120	118.366	2.780
H	692.3366	120	118.803	2.361
H	692.3387	120	122.469	3.639
H	692.3402	120	128.952	2.681

H	692.3417	120	118.257	2.777
H	692.3439	120	120.455	2.343
H	692.3453	120	118.584	3.864
H	692.3468	120	118.803	2.311
H	692.3489	120	120.012	2.641
H	692.3503	120	121.011	3.349
H	692.3518	120	118.693	2.726
H	692.3539	120	116.634	3.385
H	692.3553	120	119.792	2.751
H	692.3569	120	119.681	2.690
H	692.3590	120	117.714	3.835
H	692.3605	120	119.241	2.370
H	692.3619	120	118.584	2.916
H	692.3717	120	124.631	2.448
H	692.3729	120	121.346	3.439
H	692.3743	120	118.912	2.517
H	692.3759	120	119.131	2.400
H	692.3778	120	119.681	2.943
H	692.3793	120	119.681	3.392
H	692.3807	120	117.065	2.327
H	692.3828	120	120.566	2.507
H	692.3843	120	117.714	2.371
H	692.3857	120	119.022	2.366
H	692.3878	120	117.822	2.315
H	692.3907	120	120.234	2.459
H	692.3922	120	120.677	2.348
H	692.3937	120	120.900	2.839
H	692.3959	120	118.257	3.352
H	692.3973	120	121.235	2.847
H	692.3988	120	120.789	2.433
H	692.4003	120	122.582	2.595
H	692.4017	120	121.458	2.525
H	692.4032	120	119.131	2.340
H	692.4053	120	122.582	2.385
H	692.4067	120	120.900	2.403
H	692.4082	120	119.681	2.811
H	692.4103	120	122.356	2.432
H	692.4118	120	119.461	3.467
H	692.4133	120	121.235	2.668
H	692.4155	120	121.346	2.384
H	692.4169	120	123.716	2.407
H	692.4184	120	118.148	2.298
H	692.4500	120	118.803	2.790
H	692.4514	120	123.148	2.419
H	692.4551	120	120.789	2.715
H	692.4565	120	119.461	2.374
H	692.4580	120	116.527	2.423
H	692.4602	120	122.469	2.876
H	692.4616	120	121.011	2.377
H	693.3339	120	124.631	1.014
H	693.3353	120	124.516	1.364
H	693.3368	120	123.261	1.618
H	693.3389	120	123.602	1.440
H	693.3403	120	124.516	1.451
H	693.3417	120	121.794	1.692
H	693.3438	120	121.011	1.410
H	693.3453	120	120.123	1.093
H	693.3467	120	121.570	0.989

H	693.3489	120	124.173	1.130
H	693.3503	120	122.695	1.117
H	693.3519	120	121.123	1.102
H	693.3541	120	119.351	1.025
H	693.3556	120	122.131	1.111
H	693.3571	120	123.261	1.122
H	693.3593	120	121.458	1.503
H	693.3607	120	129.189	2.209
H	693.3622	120	122.695	1.263
H	693.3643	120	123.488	1.195
H	693.3658	120	122.244	1.112
H	693.3673	120	120.455	1.096
H	693.3694	120	122.131	1.792
H	693.3708	120	120.234	1.032
H	693.3723	120	122.131	0.994
H	693.3745	120	123.261	1.712
H	693.3760	120	121.570	1.176
H	693.3774	120	121.682	1.882
H	693.3795	120	121.906	1.984
H	693.3798	120	123.261	4.246
H	693.3813	120	121.458	2.901
H	693.3834	120	125.091	1.288
H	693.3849	120	120.566	1.035
H	693.3878	120	124.516	1.133
H	693.3892	120	125.784	2.151
H	693.3907	120	122.808	1.520
H	693.3927	120	125.322	1.373
H	693.3942	120	124.861	1.368
H	693.3959	120	125.206	1.139
H	693.3977	120	126.831	2.486
H	693.3992	120	126.132	1.220
H	693.4006	120	130.625	3.120
H	693.4022	120	127.182	3.482
H	693.4037	120	125.669	2.463
H	693.4052	120	124.746	1.071
H	693.4073	120	124.287	2.861
H	693.4088	120	125.553	1.143
H	693.4091	120	125.669	4.777
H	693.4126	120	125.437	3.655
H	693.4141	120	126.598	3.466
H	693.4155	120	127.652	1.873
H	693.4176	120	124.631	1.636
H	693.4191	120	126.016	1.654
H	693.4205	120	124.631	1.928
H	693.4226	120	125.322	2.040
H	693.4241	120	124.746	2.340
H	693.4256	120	125.322	4.429
H	693.4276	120	126.248	5.251
H	693.4291	120	128.714	4.663
H	693.4305	120	128.359	6.955
H	693.4327	120	127.887	7.968
H	693.4342	120	129.070	2.860
H	693.4357	120	132.077	6.561
H	693.4377	120	126.016	6.373
H	693.4392	120	129.786	6.214
H	693.4407	120	126.948	7.566
H	693.4421	120	126.714	6.067
H	693.4436	120	130.986	8.754

H	693.4451	120	129.427	5.964
H	693.4471	120	124.746	9.127
H	693.4487	120	122.582	1.115
H	693.4501	120	124.287	1.067
H	693.4522	120	121.458	1.782
H	693.4537	120	120.455	1.165
H	693.4551	120	123.148	1.616
H	694.3585	120	126.598	1.567
H	694.3599	120	130.866	1.659
H	694.3615	120	125.784	1.557
H	694.3604	120	123.944	1.921
H	694.3649	120	126.248	1.563
H	694.3665	120	127.299	1.900
H	694.3685	120	123.944	1.921
H	694.3700	120	128.714	1.677
H	694.3715	120	128.241	1.587
H	694.3735	120	127.417	1.902
H	694.3750	120	129.666	5.188
H	694.3765	120	128.241	1.845
H	694.3785	120	129.905	2.530
H	694.3800	120	130.505	2.183
H	694.3815	120	129.382	1.639
H	694.3834	120	130.025	3.869
H	694.3849	120	129.308	4.726
H	694.3864	120	129.905	3.331
H	694.3884	120	129.308	3.316
H	694.3899	120	128.477	2.888
H	694.3913	120	127.769	1.581
H	694.3934	120	127.534	1.579
H	694.3948	120	130.625	3.140
H	694.3964	120	130.145	2.925
H	694.3983	120	130.265	1.697
H	694.3998	120	130.025	2.439
H	694.4013	120	130.986	1.707
H	694.4034	120	129.308	4.726
H	694.4049	120	131.349	2.654
H	694.4064	120	131.228	1.663
H	694.4078	120	131.955	2.764
H	694.4093	120	130.866	1.659
H	694.4108	120	126.714	1.606
H	694.4129	120	131.470	2.286
H	694.4144	120	128.833	1.633
H	694.4159	120	128.714	1.677
H	694.4175	120	131.228	2.113
H	694.4189	120	130.625	1.656
H	694.4204	120	132.809	1.683
H	694.4219	120	131.834	1.671
H	694.4233	120	132.931	1.984
H	694.4248	120	136.781	1.734
H	694.4270	120	136.153	2.554
H	694.4291	120	138.174	4.931
H	694.4307	120	133.914	3.762
H	694.4321	120	131.349	1.626
H	694.4341	120	134.532	1.705
H	694.4355	120	130.745	2.187
H	694.4370	120	132.564	1.727
H	694.4385	120	132.320	2.130
H	694.4399	120	132.564	2.878

H	694.4414	120	130.625	1.879
H	694.4435	120	130.265	1.809
H	694.4450	120	132.931	1.685
H	694.4465	120	132.564	3.083
H	694.4479	120	132.320	3.393
H	694.4495	120	133.176	2.498
H	694.4509	120	137.286	1.789
H	694.4529	120	133.299	1.650
H	694.4544	120	137.920	2.686
H	694.4559	120	135.527	4.146
H	695.3516	120	126.481	0.737
H	695.3531	120	128.241	1.476
H	695.3546	120	128.005	0.939
H	695.3566	120	126.365	1.029
H	695.3580	120	126.481	0.737
H	695.3596	120	124.631	0.642
H	695.3616	120	124.631	2.313
H	695.3630	120	126.132	0.735
H	695.3645	120	127.887	1.694
H	695.3667	120	129.786	0.952
H	695.3682	120	125.553	0.824
H	695.3696	120	126.714	0.738
H	695.3711	120	124.746	0.819
H	695.3726	120	128.952	1.156
H	695.3740	120	130.265	1.277
H	695.3765	120	129.427	0.754
H	695.3779	120	126.714	1.242
H	695.3794	120	129.666	1.493
H	695.3815	120	124.631	0.642
H	695.3829	120	124.402	1.115
H	695.3844	120	125.669	1.775
H	695.3857	120	125.437	1.229
H	695.3879	120	132.564	1.990
H	695.3894	120	128.359	0.842
H	695.3915	120	128.596	1.817
H	695.3929	120	126.481	0.737
H	695.3944	120	123.602	0.811
H	695.3965	120	125.322	0.645
H	695.3979	120	129.189	1.939
H	695.3994	120	130.745	0.673
H	695.4015	120	124.746	0.915
H	695.4030	120	128.596	1.260
H	695.4044	120	128.005	1.696
H	695.4065	120	123.716	0.637
H	695.4080	120	129.905	1.835
H	695.4095	120	126.365	0.927
H	696.3481	120	129.070	1.375
H	696.3496	120	126.016	1.437
H	695.1936	120	129.547	1.477
H	696.3533	120	129.189	1.748
H	696.3547	120	131.955	1.505
H	696.3562	120	132.442	1.510
H	696.3583	120	128.833	1.417
H	696.3597	120	130.625	1.436
H	696.3612	120	132.564	1.877
H	696.3633	120	131.470	1.861
H	696.3647	120	133.791	1.587
H	696.3662	120	129.308	1.831

H	696.3677	120	128.596	1.820
H	696.3698	120	126.598	1.444
H	696.3713	120	127.652	1.404
H	696.3727	120	128.714	1.665
H	696.3749	120	131.470	1.499
H	696.3763	120	128.477	1.738
H	696.3778	120	130.745	1.438
H	696.3815	120	130.986	2.217
H	696.3829	120	130.745	1.691
H	696.3844	120	131.228	2.319
H	696.3865	120	129.905	2.013
H	696.3879	120	133.054	2.351
H	696.3894	120	130.986	1.554
H	696.3915	120	130.505	1.765
H	696.3930	120	130.265	1.612
H	696.3945	120	134.038	1.897
H	696.3966	120	132.199	2.142
H	696.3981	120	132.564	1.641
H	696.3995	120	131.107	1.556
H	696.4016	120	130.986	2.030
H	696.4031	120	130.986	3.365
H	696.4053	120	131.712	7.665
H	696.4073	120	131.712	1.502
H	696.4088	120	131.107	2.935
H	699.3295	120	124.976	1.120
H	699.3309	120	127.887	1.259
H	699.3325	120	124.402	1.225
H	699.3345	120	124.058	1.785
H	699.3360	120	121.011	1.256
H	699.3375	120	122.356	1.761
H	699.3396	120	123.716	1.159
H	699.3411	120	125.437	1.175
H	699.3426	120	123.944	2.071
H	699.3454	120	123.944	3.210
H	699.3469	120	123.944	1.358
H	699.3484	120	123.944	1.161
H	699.3505	120	120.123	2.904
H	699.3521	120	123.716	1.433
H	699.3535	120	123.148	1.426
H	699.3555	120	122.131	1.850
H	699.3569	120	122.244	1.145
H	699.3584	120	123.944	2.474
H	699.3605	120	124.631	3.879
H	699.3619	120	125.091	1.707
H	699.3634	120	125.437	1.536
H	699.3654	120	122.921	1.862
H	699.3669	120	123.148	2.872
H	699.3683	120	121.458	1.089
H	699.4052	120	126.831	1.137
H	699.3718	120	121.123	1.192
H	699.3734	120	123.602	1.217
H	699.3754	120	127.299	1.474
H	699.3768	120	127.652	2.654
H	699.3784	120	130.265	1.282
H	699.3821	120	126.481	1.465
H	699.3835	120	128.833	1.207
H	699.3850	120	126.948	3.288
H	699.3871	120	126.831	1.248

H	699.3885	120	129.666	3.247
H	699.3900	120	130.866	3.389
H	699.3922	120	126.831	3.176
H	699.3936	120	125.437	1.997
H	699.3950	120	125.091	1.371
H	699.3971	120	123.716	1.356
H	699.3986	120	122.356	1.146
H	699.4000	120	123.830	1.110
H	699.4023	120	126.948	1.250
H	699.4038	120	122.469	1.147
H	699.4052	120	124.402	1.225
H	699.4073	120	126.481	5.734
H	699.4088	120	124.287	1.978
H	699.4103	120	125.322	1.534
H	699.4123	120	124.402	1.441
H	699.4138	120	122.921	1.769
H	699.4153	120	125.784	1.378
H	699.4173	120	125.437	2.196
H	699.4188	120	124.516	1.524
H	699.4202	120	123.034	1.425
H	699.4224	120	123.944	1.220
H	699.4238	120	122.808	1.274
H	699.4253	120	121.906	1.492
H	700.3828	120	124.059	1.010
H	700.3843	120	123.944	1.128
H	700.3857	120	125.553	1.215
H	700.3879	120	124.402	1.068
H	700.3893	120	122.131	1.111
H	700.3908	120	129.427	1.053
H	700.3929	120	126.715	1.088
H	700.3943	120	126.831	1.306
H	700.3958	120	122.356	1.113
H	700.3978	120	127.534	1.579
H	700.3994	120	127.065	1.156
H	700.4009	120	125.206	1.643
H	700.4030	120	125.553	1.376
H	700.4044	120	128.952	1.413
H	700.4059	120	124.516	1.926
H	700.4079	120	125.669	1.144
H	700.4091	120	126.365	1.385
H	700.4108	120	125.553	1.078
H	700.4129	120	126.249	1.221
H	700.4143	120	125.206	1.019
H	700.4158	120	124.976	1.287
H	700.4178	120	124.631	1.206
H	700.4193	120	126.365	2.371
H	700.4208	120	124.402	1.633
H	700.4244	120	127.652	1.096
H	700.4259	120	127.065	1.392
H	700.4274	120	126.132	1.027
H	700.4288	120	126.249	1.149
H	700.4291	120	125.206	2.141
H	700.4305	120	130.745	2.344
H	700.4326	120	127.417	3.488
H	700.4341	120	126.831	2.273
H	700.4355	120	123.944	1.627
H	700.4376	120	124.861	3.200
H	700.4391	120	124.516	1.827

H	700.4406	120	127.887	1.401
H	700.4420	120	126.715	1.859
H	700.4435	120	123.602	1.530
H	700.4449	120	127.769	1.489
H	700.4464	120	124.173	1.130
H	700.4479	120	123.602	1.354
H	700.4499	120	122.695	1.430
H	700.4514	120	123.375	1.059
H	700.4529	120	125.553	1.744
H	700.4549	120	124.516	1.069
H	700.4448	120	123.830	1.357
H	700.4463	120	123.375	1.352
H	700.4598	120	123.716	1.062
H	700.4614	120	126.948	1.228
H	700.4628	120	120.012	1.236
H	700.4642	120	122.469	1.261
H	701.3506	120	117.281	1.487
H	701.3521	120	117.389	1.752
H	701.3535	120	120.012	1.521
H	701.3558	120	122.244	2.293
H	701.3572	120	117.497	1.632
H	701.3588	120	116.312	1.674
H	701.3608	120	117.605	1.692
H	701.3622	120	118.912	1.652
H	701.3637	120	116.098	1.733
H	701.3658	120	113.143	1.434
H	701.3672	120	113.770	1.978
H	701.3688	120	114.611	1.917
H	701.3708	120	113.247	1.823
H	701.3724	120	112.209	1.422
H	701.3738	120	110.364	1.777
H	701.3759	120	112.002	1.874
H	701.3774	120	116.420	1.476
H	701.3789	120	115.671	1.664
H	701.3810	120	116.205	1.734
H	701.3824	120	117.065	1.747
H	701.3839	120	119.131	1.601
H	701.3862	120	118.475	1.768
H	701.3876	120	115.671	1.664
H	701.3890	120	111.078	1.931
H	701.3911	120	116.527	1.677
H	701.3926	120	117.281	1.687
H	701.3940	120	115.778	1.728
H	701.3962	120	115.671	1.507
H	701.3977	120	118.803	2.065
H	701.3996	120	117.931	1.697
H	701.4011	120	117.281	1.687
H	701.4026	120	118.693	1.546
H	701.4045	120	119.131	1.714
H	701.4060	120	117.497	1.579
H	701.4075	120	119.351	1.555
H	701.4095	120	118.693	1.772
H	701.4110	120	119.131	1.714
H	701.4125	120	116.742	1.445
H	701.4147	120	115.991	1.511
H	701.4162	120	116.957	2.033
H	701.4177	120	116.742	1.809
H	701.4199	120	116.420	1.517

H	701.4214	120	117.713	1.694
H	701.4229	120	114.189	1.447
H	702.3953	120	124.173	1.680
H	702.3967	120	123.602	1.814
H	702.3982	120	123.716	2.229
H	702.4003	120	125.784	1.743
H	702.4017	120	125.437	1.739
H	702.4032	120	121.235	1.640
H	702.4053	120	125.091	1.782
H	702.4067	120	124.746	2.679
H	702.4082	120	123.602	1.814
H	702.4103	120	122.695	1.701
H	702.4117	120	125.900	1.703
H	702.4132	120	125.437	2.181
H	702.4152	120	124.631	1.651
H	702.4174	120	122.356	1.621
H	702.4194	120	124.059	2.157
H	702.4214	120	122.582	1.799
H	702.4224	120	124.631	1.686
H	702.4244	120	124.976	1.732
H	702.4259	120	122.244	2.051
H	702.4274	120	125.437	1.662
H	702.4294	120	125.437	1.900
H	702.4309	120	123.148	1.928
H	702.4324	120	124.402	2.087
H	702.4344	120	123.716	1.674
H	702.4359	120	125.206	1.735
H	702.4374	120	124.631	1.888
H	702.4393	120	124.631	1.727
H	702.4408	120	123.944	1.819
H	702.4423	120	123.830	1.875
H	702.4443	120	123.375	1.669
H	702.4458	120	124.861	2.095
H	702.4473	120	123.148	2.066
H	702.4493	120	126.249	1.750
H	702.4508	120	123.602	1.672
H	702.4523	120	124.173	1.680
H	702.4537	120	122.808	1.802
H	703.4019	120	116.957	1.096
H	703.4033	120	114.295	1.478
H	703.4048	120	115.885	1.086
H	703.4062	120	113.979	1.068
H	703.4077	120	113.770	1.066
H	703.4092	120	118.039	1.106
H	703.4113	120	115.671	1.200
H	703.4128	120	112.727	1.056
H	703.4142	120	113.979	1.068
H	703.4163	120	112.416	1.166
H	703.4177	120	116.849	1.681
H	703.4192	120	118.257	1.448
H	703.4213	120	115.034	1.078
H	703.4228	120	112.209	1.104
H	703.4242	120	116.098	1.205
H	703.4263	120	117.497	1.288
H	703.4277	120	115.034	1.078
H	703.4298	120	116.312	1.145
H	703.4313	120	116.312	1.090
H	703.4340	120	113.874	1.067

H	703.4354	120	118.475	1.450
H	703.4370	120	115.992	2.706
H	703.4390	120	115.459	1.136
H	703.4405	120	118.257	1.370
H	703.4420	120	112.727	1.056
H	668.7222	120	114.190	1.070
H	703.4456	120	114.928	1.077
H	703.4470	120	116.527	1.427
H	703.4485	120	114.084	1.184
H	703.5240	120	114.822	1.852
H	703.5255	120	118.475	2.026
H	703.5270	120	116.205	2.329
H	703.5284	120	116.098	1.872
H	703.5300	120	117.173	2.051
H	703.5314	120	115.459	2.072
H	703.5334	120	118.475	1.910
H	703.5349	120	116.420	2.205
H	703.5364	120	115.459	1.862
H	703.5385	120	116.205	1.874
H	703.5399	120	115.991	1.870
H	703.5414	120	117.713	2.501
H	703.5428	120	114.611	1.960
H	703.5443	120	115.885	1.901
H	703.5458	120	118.366	2.072
H	703.5479	120	116.098	1.942
H	703.5493	120	114.822	2.010
H	703.5508	120	116.742	2.789
H	703.5529	120	116.849	1.884
H	703.5543	120	117.713	1.898
H	703.5558	120	118.584	1.984
H	703.5583	120	114.084	1.951
H	703.5598	120	116.849	2.097
H	703.5613	120	115.778	2.192
H	703.5634	120	113.979	2.158
H	703.5648	120	117.389	2.223
H	703.5663	120	117.605	2.167
H	703.5684	120	116.634	2.628
H	703.5698	120	116.312	1.989
H	703.5713	120	117.281	1.891
H	709.5557	120	114.505	2.709
H	709.5571	120	113.665	2.793
H	710.5570	120	118.148	0.925
H	710.5585	120	118.912	1.503
H	710.5613	120	118.366	1.315
H	710.5627	120	119.241	1.000
H	710.5643	120	118.039	1.876
H	710.5663	120	116.742	2.758
H	710.5673	120	117.930	1.973
H	710.5693	120	118.693	0.929
H	720.5547	120	118.584	2.774
H	720.5562	120	116.312	3.596
H	720.5577	120	120.344	3.037
H	720.5592	120	119.791	2.861
H	720.5607	120	123.716	3.172
H	720.5621	120	121.458	2.842
H	720.5636	120	121.794	4.078
H	720.5651	120	115.459	3.119
H	720.5666	120	119.791	3.423

H	721.5507	120	131.955	3.061
H	721.5521	120	125.206	3.027
H	721.5535	120	125.322	3.448
H	721.5557	120	131.591	3.109
H	721.5571	120	132.442	3.342
H	721.5585	120	130.385	3.655
H	721.5607	120	127.299	3.041
H	721.5621	120	128.005	2.970
H	721.5636	120	129.547	3.132
H	722.5481	120	123.261	8.973
H	722.5496	120	117.605	11.772
H	722.5510	120	127.065	9.366
J	633.4851	120	60.078	5.054
J	633.4935	120	59.637	5.078
J	633.5005	120	57.374	4.908
J	633.5074	120	61.026	5.165
J	633.5208	120	59.637	5.047
J	635.5070	120	57.163	1.229
J	635.6336	120	56.483	1.373
J	635.6411	120	56.691	0.912
J	635.6470	120	58.495	1.927
J	635.6531	120	56.223	0.904
J	635.6575	120	58.065	1.328
J	635.6643	120	56.743	1.339
J	635.6752	120	57.163	1.519
J	639.6642	120	55.657	1.692
J	639.6657	120	55.172	1.728
I	504.27	60	23.344	0.637
I	504.27	60	22.294	0.406
I	504.27	60	23.130	0.210
I	508.27	60	21.095	0.384
I	508.27	60	21.487	0.391
I	508.28	60	21.487	0.391
I	509.29	60	19.239	0.175
I	509.29	60	19.063	0.173
I	509.29	60	19.063	0.173
I	511.25	60	20.332	0.185
I	511.26	60	20.332	0.185
I	511.26	60	20.710	0.188
I	511.28	60	20.520	0.187
I	511.28	60	20.332	0.185
I	511.28	60	20.520	0.187
I	516.25	60	23.560	0.214
I	516.25	60	23.344	0.212
I	516.25	60	23.344	0.425
I	516.25	60	23.778	0.216
I	516.25	60	23.998	0.437
I	516.31	60	21.095	0.384
I	516.31	60	20.902	0.380
I	516.31	60	20.710	0.377
I	517.24	60	21.290	0.194
I	517.24	60	21.095	0.192
I	517.24	60	21.095	0.192
I	619.21	30	23.344	0.425
I	619.21	30	23.130	0.421
I	619.21	30	23.344	0.425
I	619.21	30	23.344	0.425
I	619.22	30	23.778	0.433

I	619.22	30	23.344	0.425
I	619.22	30	23.560	0.429
I	619.22	30	23.344	0.425
I	619.23	30	25.362	0.231
I	619.23	30	25.362	0.231
I	619.24	30	25.362	0.231
I	619.24	30	25.362	0.231
I	619.24	30	25.129	0.229
I	619.24	30	25.362	0.231
I	619.25	30	25.129	0.229
I	619.25	30	25.362	0.231
I	619.25	30	25.362	0.231
I	619.26	30	25.362	0.231
I	631.13	30	24.220	0.441
I	631.13	30	23.778	0.433
I	631.13	30	23.998	0.437
I	631.13	30	25.362	0.462
I	632.98	30	30.774	0.280
I	632.98	30	30.774	0.280
I	632.99	30	31.346	0.285
I	632.99	30	31.929	0.291
I	632.99	30	33.127	1.206
I	632.99	30	33.434	0.304
I	633	30	30.492	0.555
I	633	30	30.492	0.555
I	633	30	29.661	0.540
I	633	30	29.661	0.540
I	633.01	30	28.852	0.263
I	633.01	30	28.852	0.525
I	633.01	30	28.066	0.255
I	633.01	30	28.066	0.511
I	633.02	30	27.554	0.501
I	633.02	30	27.051	0.492
I	633.03	30	27.554	0.501
I	633.03	30	27.301	0.248
I	634.98	30	26.314	0.479
I	634.99	30	25.362	0.462
I	634.99	30	25.129	0.457
I	634.99	30	25.129	0.457
I	635.1	30	31.929	0.581
I	635.1	30	33.743	0.614
I	635.12	30	25.597	0.932
I	635.12	30	25.833	0.940
I	635.13	30	25.597	0.699
I	635.13	30	26.314	0.718
I	635.14	30	28.326	0.516
I	635.15	30	28.066	0.511
I	635.15	30	28.326	0.516
I	635.16	30	28.588	0.520
I	635.16	30	29.119	0.530
I	635.17	30	29.119	0.795
I	635.17	30	28.852	0.525
I	635.17	30	28.852	0.525
I	635.17	30	28.066	0.511
I	635.18	30	29.119	0.795
I	635.18	30	29.389	0.535
I	635.18	30	29.119	0.530
I	635.19	30	28.852	2.100

I	640.22	120	29.119	0.265
I	640.22	120	29.119	0.265
I	641.11	120	29.389	0.535
I	641.11	120	28.852	0.525
I	643.21	120	30.774	0.280
I	643.22	120	30.774	0.280
I	644.1	120	31.346	0.285
I	644.1	120	31.346	0.285
I	648.2	120	32.224	0.586
I	648.21	120	32.522	0.592
I	648.22	120	32.224	0.586
I	655.03	120	32.224	1.759
I	655.03	120	32.224	0.586
I	655.2	120	31.929	0.581
I	655.03	120	28.066	0.255
I	655.03	120	27.809	0.253
I	655.2	120	34.370	0.313
I	655.2	120	34.370	0.313
I	655.21	120	35.009	0.319
I	655.21	120	35.009	0.319
I	655.22	120	34.688	0.316
I	655.22	120	35.009	0.319
I	678.03	120	39.827	0.626
I	678.03	120	39.608	0.639
I	678.04	120	39.974	0.645
I	678.04	120	39.718	0.713
I	678.06	120	38.885	0.618
I	678.06	120	39.608	0.794
I	678.07	120	39.173	0.615
I	678.07	120	39.901	0.655
I	678.09	120	39.245	0.657
I	678.09	120	39.245	0.624
I	678.1	120	39.644	0.639
I	678.12	120	38.387	0.610
I	678.12	120	38.529	0.612
I	678.13	120	38.422	0.630
I	678.13	120	38.493	0.612
I	679.08	120	37.756	1.039
I	679.09	120	38.778	0.848
I	680.01	120	39.974	0.635
I	680.02	120	38.000	0.665
I	680.03	120	37.410	0.671
I	680.03	120	37.375	0.639
I	680.04	120	36.896	0.595
I	680.05	120	37.617	0.629
I	680.06	120	37.169	0.599
I	680.06	120	38.035	0.613
I	680.08	120	37.410	0.655
I	680.08	120	37.272	0.815
I	680.14	120	35.726	0.568
I	680.14	120	35.924	0.564
I	681.1	120	38.458	0.643
I	681.1	120	38.210	0.607
I	681.11	120	38.529	0.612
I	681.12	120	36.457	0.579
I	681.13	120	39.245	0.937
I	681.13	120	39.901	0.716
I	682.03	120	38.000	0.604

I	682.03	120	37.860	0.602
I	682.04	120	37.169	0.591
I	682.05	120	36.896	0.586
I	682.06	120	36.491	0.580
I	682.06	120	36.357	0.596
I	682.07	120	36.457	0.672
I	682.08	120	36.794	0.616
I	682.1	120	36.457	0.731
I	682.1	120	36.189	0.605
I	682.11	120	36.223	0.747
I	682.11	120	36.693	0.851
I	682.13	120	35.660	0.610
I	682.13	120	36.090	0.767
I	683.02	120	38.210	0.788
I	683.02	120	37.169	0.599
I	683.02	120	36.223	0.584
I	683.03	120	36.457	0.588
I	683.03	120	35.594	0.574
I	683.05	120	35.431	0.593
I	683.05	120	35.792	0.577
I	683.06	120	35.924	0.579
I	683.06	120	38.849	0.680
I	684.02	120	38.885	0.802
I	684.02	120	39.390	0.626
I	684.04	120	39.608	0.771
I	684.04	120	38.529	0.605
I	684.05	120	37.479	0.604
I	684.05	120	39.101	0.631
I	684.07	120	39.029	0.719
I	684.07	120	36.189	0.633
I	689.02	120	36.761	0.603
I	689.02	120	36.896	0.662
I	689.03	120	35.957	0.645
I	689.04	120	41.132	0.663
I	690.08	120	40.718	0.647
I	690.08	120	42.285	0.759
I	690.09	120	42.052	0.704
I	690.11	120	42.480	0.851
I	690.11	120	41.589	0.696
I	690.11	120	42.794	1.022
I	691.06	120	41.704	0.655
I	691.06	120	42.013	0.718
I	691.08	120	42.207	0.951
I	691.08	120	38.387	0.619
I	692.02	120	38.105	0.684
I	692.02	120	39.426	0.660
I	692.04	120	39.101	0.669
I	692.04	120	37.825	0.601
I	692.06	120	38.210	0.639
I	692.08	120	38.778	0.616
I	692.08	120	38.885	0.611
I	692.14	120	39.827	0.734
I	693.02	120	39.608	0.629
I	693.03	120	39.499	0.709
I	693.04	120	38.849	0.680
I	693.04	120	38.458	0.643
I	693.05	120	38.316	0.609
I	693.06	120	39.426	0.747

I	693.07	120	39.029	0.700
I	693.08	120	38.635	0.634
I	693.09	120	37.548	0.775
I	693.09	120	37.965	0.603
I	693.1	120	37.686	0.592
I	693.11	120	37.756	0.600
I	693.12	120	37.930	0.596
I	693.12	120	38.387	0.610
I	693.14	120	37.513	0.596
I	694.05	120	38.210	0.600
I	694.05	120	38.493	0.612
I	694.08	120	38.493	0.612
I	694.08	120	39.462	0.627
I	694.09	120	39.974	0.635
I	694.1	120	40.011	0.636
I	694.11	120	39.499	0.769
I	694.11	120	40.868	0.649
I	694.11	120	40.568	0.679
I	694.13	120	39.499	0.675
I	694.13	120	39.390	0.689
I	694.14	120	39.353	0.635
I	694.14	120	39.101	0.614
I	695.05	120	40.680	0.639
I	695.05	120	39.938	0.635
I	695.06	120	38.921	0.628
I	695.07	120	38.671	1.275
I	695.08	120	38.635	0.614
I	695.08	120	38.458	0.611
I	695.09	120	39.137	0.685
I	695.1	120	38.422	0.604
I	696.05	120	39.101	0.621
I	696.05	120	39.245	0.704
I	696.06	120	40.531	0.693
I	696.06	120	40.196	0.639
I	696.08	120	40.643	0.646
I	696.08	120	40.755	0.794
I	696.09	120	40.943	0.660
I	699.03	120	41.475	0.785
I	699.03	120	41.436	0.651
I	699.04	120	40.906	0.650
I	699.04	120	41.436	0.693
I	699.04	120	41.551	0.787
I	699.06	120	42.052	0.796
I	699.06	120	41.132	0.675
I	699.08	120	41.360	0.667
I	699.08	120	41.666	0.729
I	699.09	120	40.755	0.648
I	699.1	120	41.589	0.653
I	699.11	120	40.943	0.651
I	699.11	120	41.936	0.666
I	700.04	120	41.284	0.723
I	700.04	120	41.170	0.849
I	700.05	120	46.388	0.107
I	700.05	120	40.793	0.714
I	700.05	120	40.793	0.641
I	700.08	120	41.246	0.648
I	700.08	120	40.943	0.651
I	700.09	120	40.755	0.713

I	700.1	120	40.270	0.742
I	700.11	120	40.755	0.713
I	700.11	120	40.680	0.647
I	701.03	120	40.943	0.735
I	701.03	120	37.895	0.648
I	701.04	120	37.721	0.695
I	701.05	120	38.387	0.610
I	701.06	120	38.387	0.619
I	701.06	120	38.778	0.874
I	701.07	120	39.137	0.702
I	701.07	120	37.479	0.615
I	701.07	120	37.895	0.648
I	701.09	120	37.101	0.590
I	701.09	120	37.238	0.592
I	702.04	120	39.499	0.691
I	702.04	120	40.307	0.763
I	702.05	120	40.382	0.634
I	702.05	120	40.270	0.633
I	702.07	120	41.094	0.653
I	702.07	120	40.568	0.645
I	702.08	120	41.132	0.654
I	702.08	120	41.513	0.669
I	703.05	120	36.592	0.657
I	703.06	120	37.341	0.593
I	703.06	120	37.375	0.613
I	703.08	120	36.964	0.647
I	703.08	120	37.341	0.638
I	704.04	120	36.390	0.622
I	704.04	120	36.056	0.581
I	704.06	120	36.998	0.597
I	704.06	120	36.625	0.575
I	704.08	120	36.896	0.586
I	704.08	120	37.721	0.599
I	711.07	120	36.524	0.574
I	711.08	120	36.090	0.592
I	715.04	120	37.032	0.633
I	715.04	120	36.794	0.616
I	715.05	120	36.964	0.596
I	715.05	120	36.727	0.643
I	721.06	120	34.212	0.585
I	721.06	120	35.236	0.560
I	722.06	120	37.965	0.783
I	722.06	120	38.281	0.705
R	504.27	60	20.601	0.375
R	504.28	60	19.856	0.361
R	504.28	60	20.791	0.757
R	508.28	60	17.942	0.163
R	508.28	60	17.778	0.162
R	508.29	60	17.778	0.162
R	509.29	60	17.778	0.162
R	509.29	60	17.615	0.160
R	509.29	60	17.778	0.162
R	510.3	60	16.214	0.295
R	510.3	60	16.364	0.149
R	510.3	60	16.364	0.149
R	511.26	60	18.962	0.173
R	511.26	60	18.788	0.171
R	511.26	60	19.137	0.174

R	511.28	60	18.962	0.173
R	511.28	60	18.788	0.171
R	511.28	60	18.788	0.171
R	516.25	60	21.178	0.193
R	516.25	60	18.445	0.168
R	516.25	60	18.616	0.169
R	517.24	60	19.674	0.179
R	517.24	60	19.314	0.176
R	517.24	60	19.493	0.177
R	517.25	60	19.493	0.177
R	517.25	60	19.493	0.177
R	517.25	60	19.493	0.177
R	619.2	30	26.175	0.476
R	619.21	30	26.175	0.476
R	619.21	30	26.175	0.476
R	619.21	30	26.175	0.476
R	619.22	30	23.653	0.215
R	619.22	30	23.653	0.215
R	619.23	30	23.872	0.217
R	619.23	30	23.872	0.217
R	619.24	30	23.653	0.215
R	619.24	30	23.872	0.217
R	619.24	30	23.653	0.215
R	619.24	30	23.872	0.217
R	619.25	30	24.093	0.219
R	619.25	30	24.093	0.219
R	619.25	30	24.093	0.219
R	619.25	30	24.093	0.219
R	631.13	30	26.661	0.485
R	631.13	30	26.908	0.490
R	632.98	30	28.700	0.261
R	632.98	30	28.700	0.261
R	632.99	30	28.966	0.264
R	632.99	30	28.700	0.261
R	632.99	30	28.966	0.264
R	632.99	30	28.966	0.264
R	632.99	30	29.234	0.266
R	632.99	30	29.234	0.266
R	633	30	28.700	0.261
R	633	30	28.700	0.261
R	633.01	30	27.918	0.254
R	633.01	30	28.176	0.256
R	633.01	30	27.662	0.252
R	633.01	30	27.408	0.249
R	633.02	30	26.661	0.243
R	633.02	30	26.661	0.243
R	633.02	30	26.417	0.240
R	633.02	30	26.417	0.240
R	634.98	30	23.653	0.215
R	634.98	30	23.008	0.209
R	634.98	30	23.872	0.217
R	634.98	30	23.872	0.217
R	635.1	30	27.408	0.249
R	635.1	30	27.408	0.249
R	635.13	30	28.176	0.769
R	635.13	30	28.966	0.527
R	635.13	30	28.437	1.035
R	635.13	30	28.437	0.776

R	635.14	30	29.777	0.813
R	635.14	30	28.700	0.784
R	635.15	30	28.176	0.769
R	635.15	30	28.700	0.784
R	635.15	30	26.175	0.238
R	635.15	30	25.697	0.468
R	635.16	30	25.935	0.236
R	635.16	30	25.935	0.236
R	635.17	30	24.093	0.658
R	635.17	30	25.935	0.236
R	635.17	30	25.935	0.236
R	635.18	30	26.417	0.240
R	635.18	30	26.661	0.485
R	635.18	30	25.697	0.468
R	635.18	30	24.997	0.455
R	635.19	30	25.935	0.472
R	635.19	30	26.417	0.481
R	640.22	120	28.966	0.264
R	640.22	120	27.408	0.249
R	641.11	120	31.760	0.578
R	641.11	120	31.760	0.578
R	644.1	120	27.408	0.499
R	644.1	120	27.662	0.503
R	648.21	120	28.437	0.259
R	648.21	120	28.966	0.264
R	648.22	120	28.437	0.518
R	648.22	120	30.053	1.641
R	652.05	120	31.760	0.289
R	655.02	120	26.417	0.240
R	655.02	120	26.417	0.240
R	655.03	120	25.461	0.232
R	655.03	120	25.461	0.232
R	655.2	120	32.351	0.294
R	655.2	120	32.351	0.294
R	655.21	120	32.351	0.294
R	655.21	120	32.351	0.294
R	665.04	30	31.469	0.573
R	665.04	30	32.054	0.583
R	678.02	30	34.824	0.634
R	678.02	120	35.480	0.915
R	678.02	120	35.980	0.927
R	678.04	120	35.980	0.957
R	678.04	120	35.409	0.914
R	678.05	120	35.303	0.925
R	678.05	120	35.409	0.922
R	678.07	120	35.303	0.919
R	678.07	120	35.551	0.920
R	678.08	120	34.846	0.989
R	678.08	120	34.846	0.908
R	678.1	120	34.846	0.904
R	678.1	120	34.637	0.909
R	678.11	120	34.222	0.893
R	678.11	120	34.119	0.891
R	678.13	120	33.406	0.869
R	678.13	120	33.676	0.876
R	679.08	120	34.187	0.958
R	679.08	120	33.880	0.891
R	680.01	120	33.507	1.134

R	680.01	120	33.507	1.248
R	680.02	120	33.138	1.062
R	680.03	120	32.707	0.857
R	680.04	120	32.972	0.869
R	680.04	120	33.238	0.933
R	680.05	120	33.005	1.185
R	680.06	120	33.005	0.970
R	680.07	120	32.707	1.318
R	680.07	120	32.905	1.159
R	680.13	120	32.707	0.896
R	680.13	120	31.731	0.862
R	681.09	120	31.699	0.845
R	681.1	120	34.360	0.892
R	681.11	120	34.498	0.900
R	681.11	120	34.291	0.960
R	681.12	120	34.429	0.929
R	681.13	120	34.671	0.917
R	682.02	120	35.021	0.934
R	682.03	120	34.846	0.939
R	682.04	120	34.846	1.176
R	682.04	120	33.744	1.023
R	682.05	120	33.272	1.046
R	682.06	120	32.806	1.156
R	682.07	120	32.905	0.874
R	682.07	120	33.812	0.889
R	682.09	120	33.744	1.120
R	682.09	120	31.539	0.997
R	682.11	120	31.476	0.847
R	682.11	120	32.021	0.890
R	682.12	120	31.317	0.862
R	682.12	120	31.190	0.832
R	683.01	120	31.444	0.832
R	683.01	120	31.190	0.858
R	683.03	120	31.635	0.831
R	683.03	120	31.476	0.828
R	683.04	120	31.731	0.853
R	683.04	120	32.086	0.842
R	683.06	120	31.731	0.834
R	683.06	120	30.782	0.816
R	684.01	120	31.001	0.821
R	684.01	120	33.339	0.936
R	684.02	120	33.305	0.884
R	684.02	120	34.085	0.896
R	684.03	120	33.541	0.877
R	684.03	120	34.050	0.919
R	684.05	120	34.602	0.997
R	684.05	120	34.256	0.915
R	684.06	120	34.050	0.919
R	684.06	120	33.812	0.879
R	689.01	120	33.744	0.882
R	689.02	120	31.892	0.837
R	689.03	120	32.183	0.844
R	689.03	120	32.054	0.870
R	690.07	120	32.444	0.851
R	690.08	120	36.161	0.953
R	690.09	120	35.056	0.935
R	690.09	120	35.909	0.934
R	690.1	120	36.125	0.934

R	690.11	120	36.269	0.998
R	691.06	120	36.415	0.946
R	691.06	120	36.891	1.216
R	691.07	120	38.277	1.190
R	691.07	120	37.410	1.027
R	692.02	120	37.112	1.137
R	692.02	120	33.914	0.886
R	692.03	120	34.256	0.915
R	692.03	120	33.272	0.883
R	692.05	120	33.406	1.032
R	692.06	120	33.138	0.867
R	692.07	120	33.272	0.871
R	692.08	120	33.071	0.866
R	692.09	120	33.948	0.887
R	692.09	120	33.575	0.878
R	692.13	120	33.507	0.916
R	692.13	120	33.914	0.927
R	693.02	120	34.567	0.902
R	693.02	120	34.222	0.893
R	693.03	120	33.710	0.881
R	693.04	120	33.238	0.870
R	693.05	120	33.812	0.883
R	693.05	120	33.642	0.879
R	693.06	120	33.105	0.867
R	693.07	120	33.205	0.869
R	693.07	120	33.205	0.869
R	693.07	120	32.905	0.862
R	693.08	120	33.005	0.864
R	693.09	120	32.608	0.855
R	693.1	120	32.938	0.863
R	693.1	120	32.872	0.861
R	693.11	120	32.839	0.860
R	693.12	120	32.740	0.858
R	694.05	120	35.729	0.929
R	694.05	120	35.409	0.922
R	694.06	120	35.587	0.926
R	694.06	120	35.622	0.927
R	694.07	120	34.916	0.910
R	694.07	120	34.811	0.907
R	694.09	120	35.232	0.917
R	694.09	120	35.551	0.931
R	694.1	120	35.515	0.924
R	695.04	120	34.637	0.903
R	695.05	120	34.741	0.906
R	695.06	120	33.880	0.881
R	695.06	120	34.085	0.890
R	695.07	120	33.744	0.888
R	695.08	120	33.778	0.883
R	695.09	120	34.187	0.892
R	695.09	120	33.914	0.886
R	696.04	120	35.338	0.974
R	696.04	120	34.986	0.907
R	696.06	120	34.532	0.901
R	696.06	120	34.567	0.902
R	696.07	120	35.056	0.913
R	696.08	120	35.126	0.915
R	696.09	120	36.016	0.931
R	696.09	120	36.089	1.021

R	699.02	120	37.186	1.180
R	699.02	120	36.927	1.217
R	699.04	120	35.444	1.217
R	699.04	120	36.744	1.146
R	699.05	120	36.089	0.933
R	699.05	120	36.488	0.991
R	699.07	120	35.837	0.932
R	699.08	120	35.658	0.923
R	699.09	120	36.233	0.941
R	699.09	120	35.622	1.040
R	699.1	120	36.089	0.933
R	699.11	120	36.415	0.989
R	700.03	120	36.161	0.940
R	700.03	120	35.837	0.932
R	700.05	120	35.409	0.922
R	700.05	120	35.480	0.923
R	700.06	120	35.338	0.920
R	700.06	120	35.303	0.919
R	700.07	120	34.846	0.908
R	700.08	120	35.021	0.912
R	700.09	120	34.222	0.893
R	700.09	120	35.091	0.914
R	700.1	120	35.056	0.909
R	700.11	120	35.303	0.919
R	701.02	120	33.440	0.875
R	701.03	120	33.473	0.871
R	701.04	120	34.085	0.890
R	701.04	120	34.016	0.997
R	701.05	120	33.676	0.932
R	701.06	120	33.812	1.008
R	701.07	120	33.778	1.024
R	701.07	120	32.972	0.914
R	701.08	120	33.473	0.871
R	701.08	120	33.105	1.143
R	702.03	120	36.306	1.076
R	702.04	120	36.488	0.947
R	702.05	120	35.622	0.927
R	702.05	120	35.694	0.928
R	702.06	120	36.016	0.936
R	702.06	120	36.125	0.934
R	702.08	120	36.634	0.965
R	702.08	120	36.670	0.958
R	703.04	120	32.313	0.910
R	703.04	120	32.411	0.855
R	703.05	120	32.608	0.917
R	703.06	120	32.641	0.895
R	703.07	120	32.510	0.852
R	703.08	120	32.575	0.854
R	704.04	120	32.021	0.879
R	704.04	120	32.248	0.846
R	704.05	120	31.795	0.831
R	704.05	120	32.313	0.886
R	704.07	120	32.740	0.878
R	704.07	120	32.248	0.866
R	711.07	120	32.641	0.976
R	711.07	120	32.248	1.138
R	715.04	120	32.806	1.178
R	715.03	120	32.608	0.959

R	715.05	120	32.674	1.048
R	715.05	120	32.707	1.030
R	721.06	120	31.412	0.943
R	721.06	120	31.763	1.513
R	722.05	120	33.071	1.682
R	722.07	120	34.986	0.912
R	723.05	120	35.021	1.626
V	504.29	60	18.243	0.332
V	504.29	60	18.928	0.172
V	504.29	60	18.076	0.164
V	504.3	60	18.243	0.166
V	504.3	60	18.243	0.166
V	504.3	60	18.076	0.164
V	508.29	60	17.910	0.163
V	508.29	60	17.910	0.163
V	508.29	60	17.910	0.163
V	509.29	60	17.583	0.160
V	509.29	60	17.422	0.159
V	509.29	60	17.583	0.160
V	510.3	60	16.185	0.295
V	510.3	60	16.185	0.147
V	510.3	60	16.185	0.147
V	511.26	60	18.412	0.168
V	511.26	60	18.412	0.168
V	511.26	60	18.412	0.168
V	511.28	60	18.412	0.168
V	511.28	60	18.582	0.169
V	511.28	60	18.412	0.168
V	516.31	60	18.412	0.168
V	516.31	60	18.754	0.171
V	516.31	60	18.076	0.164
V	517.24	60	18.582	0.169
V	517.24	60	18.582	0.169
V	517.24	60	18.582	0.169
V	517.25	60	18.412	0.168
V	517.25	60	18.412	0.168
V	517.25	60	18.412	0.168
V	619.2	30	25.183	0.458
V	619.2	30	24.952	0.454
V	619.21	30	25.651	0.467
V	619.21	30	24.952	0.454
V	619.22	30	23.179	0.211
V	619.22	30	23.179	0.211
V	619.22	30	23.394	0.213
V	619.22	30	23.179	0.211
V	619.23	30	23.179	0.211
V	619.23	30	23.394	0.213
V	619.23	30	23.394	0.213
V	619.23	30	23.394	0.213
V	619.24	30	23.610	0.215
V	619.24	30	23.394	0.213
V	619.25	30	23.610	0.215
V	619.25	30	23.610	0.215
V	619.26	30	23.610	0.215
V	619.26	30	23.610	0.215
V	632.98	30	28.386	0.258
V	632.98	30	28.648	0.261
V	632.99	30	29.724	0.270

V	632.99	30	28.648	0.261
V	633	30	28.386	0.258
V	633	30	28.386	0.258
V	633.01	30	27.359	0.249
V	633.01	30	27.108	0.247
V	633.01	30	26.860	0.244
V	633.01	30	26.613	0.242
V	633.01	30	26.128	0.238
V	633.02	30	26.128	0.238
V	634.98	30	22.341	0.203
V	634.98	30	22.136	0.201
V	635.1	30	26.128	0.476
V	635.1	30	25.651	0.467
V	635.12	30	28.386	0.775
V	635.13	30	29.181	0.797
V	635.13	30	28.648	1.043
V	635.13	30	28.386	1.808
V	635.14	30	29.181	0.797
V	635.14	30	26.613	0.242
V	635.14	30	26.860	0.244
V	635.14	30	27.108	0.247
V	635.15	30	26.860	0.489
V	635.15	30	26.860	0.489
V	635.16	30	26.860	0.489
V	635.16	30	26.369	0.480
V	635.16	30	26.369	0.480
V	635.16	30	26.128	0.476
V	635.17	30	25.651	0.467
V	635.17	30	26.369	0.480
V	635.18	30	26.128	0.238
V	635.18	30	26.369	0.480
V	635.19	30	26.860	0.733
V	635.19	30	26.369	0.720
V	640.21	120	27.868	0.254
V	640.21	120	27.612	0.251
V	641.1	120	32.292	0.294
V	641.11	120	31.996	0.291
V	643.21	120	28.386	0.258
V	643.21	120	28.386	0.258
V	644.1	120	29.181	0.266
V	644.1	120	28.648	0.261
V	648.2	120	28.386	0.258
V	648.2	120	28.914	0.263
V	648.21	120	28.126	0.256
V	648.21	120	28.126	0.256
V	648.22	120	30.839	1.123
V	648.22	120	29.724	0.541
V	651.08	120	33.504	0.915
V	651.08	120	32.591	0.890
V	651.2	120	32.591	0.297
V	651.2	120	33.814	0.308
V	651.21	120	32.591	0.297
V	651.22	120	32.591	0.297
V	651.23	120	32.591	0.297
V	651.23	120	32.591	0.297
V	651.24	120	32.591	0.297
V	651.24	120	32.591	0.297
V	652.07	120	34.762	0.316

V	652.08	120	34.443	0.313
V	652.2	120	31.124	0.283
V	652.2	120	30.839	0.281
V	652.21	120	31.412	0.286
V	652.21	120	31.124	0.283
V	652.23	120	31.412	0.286
V	652.23	120	31.412	0.286
V	652.24	120	31.124	0.283
V	652.24	120	31.124	0.283
V	655.02	120	25.183	0.229
V	655.02	120	25.183	0.229
V	655.2	120	32.591	0.297
V	655.2	120	32.591	0.297
V	655.21	120	32.292	0.294
V	655.21	120	32.591	0.297
V	655.22	120	32.591	0.297
V	655.22	120	32.591	0.297
V	664.2	30	34.127	0.621
V	664.2	30	34.443	0.627
V	664.21	30	35.083	0.639
V	664.21	30	27.359	0.249
V	678.02	120	35.278	0.498
V	678.02	120	35.083	0.505
V	678.03	120	34.096	0.482
V	678.03	120	34.443	0.506
V	678.05	120	33.783	0.477
V	678.05	120	33.320	0.643
V	678.06	120	33.258	0.757
V	678.06	120	33.258	0.733
V	678.08	120	32.712	0.697
V	678.08	120	32.832	0.846
V	678.09	120	33.106	0.487
V	678.09	120	31.996	1.190
V	678.11	120	32.442	1.289
V	678.11	120	32.174	1.444
V	678.12	120	31.820	0.724
V	678.12	120	31.762	1.101
V	679.07	120	33.075	0.486
V	679.08	120	33.106	0.777
V	679.09	120	30.109	0.944
V	679.1	120	29.316	0.755
V	679.13	120	32.893	0.847
V	679.13	120	31.441	0.568
V	679.14	120	31.239	1.869
V	679.15	120	31.412	0.627
V	680	120	33.075	0.486
V	680.01	120	32.501	0.490
V	680.02	120	32.382	0.625
V	680.02	120	32.772	0.482
V	680.03	120	32.144	0.803
V	680.04	120	32.382	0.646
V	680.05	120	32.263	0.856
V	680.05	120	32.742	0.537
V	680.07	120	32.115	0.472
V	680.07	120	30.726	1.273
V	680.13	120	33.014	0.485
V	680.13	120	32.832	0.483
V	681.09	120	36.805	0.785

V	681.09	120	37.282	0.821
V	681.1	120	36.300	0.852
V	681.11	120	35.967	0.650
V	681.12	120	37.111	0.985
V	681.12	120	36.635	0.807
V	682.02	120	33.474	0.518
V	682.02	120	34.096	0.491
V	682.03	120	32.292	0.456
V	682.04	120	32.292	0.475
V	682.05	120	31.908	0.451
V	682.05	120	31.732	0.491
V	682.06	120	32.471	0.861
V	682.07	120	31.908	0.494
V	682.09	120	33.474	1.049
V	682.09	120	35.408	1.139
V	682.1	120	33.846	0.770
V	682.1	120	34.127	0.728
V	682.12	120	32.412	0.810
V	682.12	120	32.681	1.051
V	683.01	120	32.352	0.784
V	683.01	120	32.115	0.497
V	683.02	120	31.762	0.723
V	683.04	120	31.499	0.860
V	683.04	120	31.211	0.564
V	683.05	120	30.641	0.450
V	683.05	120	31.355	0.461
V	684.01	120	33.350	0.735
V	684.01	120	33.474	0.473
V	684.03	120	34.666	0.920
V	684.03	120	32.681	0.919
V	684.04	120	34.507	0.997
V	684.04	120	32.561	0.915
V	684.06	120	32.651	0.816
V	684.06	120	31.996	0.874
V	689.01	120	31.849	0.507
V	689.01	120	32.233	0.486
V	689.02	120	31.996	0.470
V	689.03	120	32.352	0.476
V	690.06	120	36.434	0.536
V	690.07	120	36.872	0.555
V	690.07	120	35.769	0.526
V	690.07	120	36.266	0.533
V	690.08	120	35.473	0.549
V	690.09	120	36.000	1.070
V	690.1	120	35.670	0.891
V	690.1	120	35.375	0.911
V	691.05	120	37.351	0.578
V	691.05	120	36.974	0.557
V	691.07	120	37.145	0.560
V	691.07	120	36.838	0.542
V	692.01	120	32.233	0.486
V	692.01	120	33.014	0.526
V	692.03	120	33.412	0.481
V	692.03	120	33.412	0.481
V	692.04	120	33.908	0.556
V	692.05	120	32.412	0.466
V	692.05	120	32.471	0.467
V	692.06	120	34.570	0.508

V	692.07	120	34.634	0.498
V	692.07	120	33.566	0.483
V	692.08	120	34.285	0.493
V	692.09	120	34.570	0.508
V	692.13	120	31.879	0.846
V	692.13	120	31.557	0.837
V	693.01	120	34.411	0.602
V	693.03	120	34.826	0.695
V	693.03	120	33.628	0.484
V	693.04	120	34.002	0.541
V	693.05	120	33.939	0.488
V	693.06	120	33.443	0.481
V	693.06	120	33.628	0.484
V	693.06	120	33.136	0.477
V	693.08	120	33.535	0.505
V	693.08	120	32.953	0.484
V	693.09	120	32.832	0.593
V	693.1	120	33.075	0.498
V	693.11	120	33.228	0.600
V	693.11	120	32.712	0.894
V	693.12	120	33.197	0.488
V	693.13	120	33.535	0.493
V	694.04	120	34.890	0.513
V	694.04	120	34.762	0.511
V	694.06	120	35.278	0.546
V	694.06	120	34.666	0.510
V	694.07	120	35.343	0.520
V	694.07	120	35.703	0.525
V	694.08	120	35.083	0.516
V	694.08	120	34.987	0.514
V	694.1	120	34.954	0.982
V	694.1	120	35.703	0.525
V	694.11	120	34.222	0.515
V	694.12	120	34.285	0.504
V	694.12	120	34.159	0.515
V	694.13	120	34.443	0.506
V	694.13	120	31.732	0.448
V	695.04	120	34.285	0.504
V	695.04	120	34.507	0.507
V	695.05	120	34.033	0.500
V	695.06	120	34.064	0.501
V	695.07	120	33.939	0.511
V	695.07	120	34.096	0.527
V	695.08	120	33.721	0.496
V	695.09	120	33.721	0.496
V	696.04	120	34.602	0.509
V	696.04	120	34.762	0.511
V	696.05	120	34.826	0.512
V	696.05	120	34.316	0.505
V	696.07	120	34.507	0.520
V	696.07	120	34.666	0.715
V	696.08	120	35.019	0.515
V	696.09	120	35.703	0.689
V	699.02	120	35.245	0.518
V	699.02	120	35.506	0.914
V	699.03	120	35.310	0.519
V	699.03	120	34.411	0.506
V	699.05	120	34.348	0.505

V	699.05	120	34.538	0.508
V	699.06	120	35.083	0.516
V	699.06	120	34.666	0.510
V	699.07	120	33.814	0.497
V	699.07	120	35.148	0.517
V	699.08	120	34.602	0.509
V	699.09	120	35.148	0.517
V	699.1	120	35.604	0.523
V	699.1	120	35.441	0.521
V	700.03	120	35.868	0.527
V	700.03	120	35.441	0.521
V	700.04	120	35.525	0.530
V	700.04	120	34.922	0.513
V	700.06	120	34.634	0.522
V	700.06	120	35.019	0.527
V	700.07	120	34.380	0.505
V	700.07	120	34.634	0.669
V	700.08	120	34.253	0.504
V	700.09	120	34.890	0.610
V	700.1	120	34.858	0.845
V	700.1	120	33.908	0.511
V	701.02	120	32.203	0.513
V	701.02	120	32.501	0.490
V	701.03	120	32.292	0.486
V	701.04	120	31.791	0.479
V	701.05	120	32.501	0.490
V	701.05	120	32.712	0.972
V	701.06	120	31.326	0.585
V	701.08	120	32.115	0.852
V	701.08	120	32.893	0.484
V	702.03	120	35.051	0.515
V	702.03	120	35.834	0.527
V	702.04	120	35.769	0.526
V	702.04	120	35.148	0.517
V	702.06	120	35.736	0.525
V	702.06	120	35.901	0.716
V	702.07	120	35.571	0.809
V	702.07	120	35.245	0.531
V	703.03	120	31.211	0.459
V	703.04	120	31.703	0.916
V	703.05	120	30.613	0.740
V	703.05	120	31.470	0.739
V	703.06	120	30.924	0.541
V	703.07	120	31.879	0.595
V	703.07	120	31.791	0.747
V	703.07	120	31.067	0.468
V	704.03	120	31.239	0.459
V	704.03	120	31.067	0.457
V	704.05	120	31.239	0.459
V	704.05	120	31.239	0.666
V	704.06	120	31.441	0.474
V	704.06	120	31.470	0.445
V	704.07	120	31.616	0.590
V	704.07	120	31.268	0.498
V	710.06	120	29.669	0.447
V	710.07	120	29.154	0.601
V	711.07	120	31.586	0.765
V	711.07	120	31.674	0.941

V	715.03	120	31.703	0.592
V	715.03	120	32.442	0.990
V	715.04	120	31.820	0.771
V	715.04	120	31.967	0.638
V	721.05	120	29.806	0.678
V	721.05	120	30.248	0.710
V	722.05	120	32.591	0.695
V	722.05	120	32.681	0.590
V	723.05	120	32.115	0.754
V	723.05	120	31.820	0.724

Table A.1: Log of observations. Epoch of observations is reported in JD-2453000.5 unit.

References

Bersanelli, M., Bouchet, P., Falomo, R, & Tanzi, E. G., 1992, AJ, 104, 28
Bertone, E., Tagliaferri, G., Ghisellini, G., et al. 2000, A&A, 356, 1
Cardelli, J. A., Clayton, G. C. & Mathis, J. S. 1989, ApJ, 345, 245
Chincarini, G., Zerbi, F., Antonelli, A., et al. 2003, The Messenger, 113, 40
Covino, S., Stefanon, M., Fernandez-Soto, A., et al. 2004, SPIE, 5492, 1613
Chiappetti, L., Maraschi, L., Tavecchio, F., et al. 1999, ApJ, 521, 552
De Diego, J. A., Kidger, M. R., Gonzáles-Pérez, J. N., and Letho, H. J., 1997, A&A, 318, 331
Dolcini, A., Covino, S., Treves, A.,et al. 2005, A&A, 443, L33
Edelson, R., Krolik, J., Madejski, G., et al. 1995, ApJ, 438, 120
Falomo, R., Giraud, E., Maraschi, L., et al., ApJ, 1991, 380, L67
Falomo, R., Bersanelli, M., Bouchet, P., Tanzi, E. M., AJ, 1993, 106, 11
Fan, J. H. & Lin, R. G., A&A, 355, 880
Fuhrmann, L., Cucchiara, A., Marchili, N., et al. 2006, A&A, 445L, 1
Hamuy, M. & Maza, J. 1989, AJ, 97, 720
Katarzynski, K., Ghisellini, G., Tavecchio, F., et al. 2005, A&A, 433, 479
Katarzynsky, K., Ghisellini, G., Mastichiadis, A., et al. 2006, A&A, 453, 47
Katarzynski, K. & Ghisellini, G., 2006, A&A, in press [arXiv:astro-ph/0610801]
Kotilainen, J. K., Falomo, R., & Scarpa, R. 1998, A&A, 336, 479
Landolt, A. U., 1992, AJ, 104, 340
Mannucci, F., Basile, F., Poggianti, B. M., et al., 2001, MNRAS, 326, 745
Miller, H. R., McAlister, 1983, ApJ, 272, 26
Molinari et al., 2006, [arXiv:astro-ph/0612607]
Montagni, F., Maselli, A., Massaro, E., et al. 2006, A&A, 451, 435
Paltani, S., Courvoisier, T. J.-L., Blecha, A., & Bratschi, P. 1997, A&A, 327, 539
Pesce, J. E., Urry, C. M., Maraschi, L., et al. 1997, ApJ, 486, 770
Pian, E., Vacanti, G., Tagliaferri, G., et al. 1998, ApJ, 492, L17
Pian, E., Urry, C. M., Maraschi, L., et al. 1999, ApJ, 521, 112-120
Pian, E., Falomo, R., Hartman, R.C., et al. 2002, ApJ, 392, 407-415
Pian, E., Romano, P., Treves, A., et al. 2006, in preparation
Sbarufatti, B., Falomo, R., Treves, A. & Kotilainen, J. 2006, A&A, 457, 35
Sembay, S., Edelson, R., Markowitz, A., et al. 2002, ApJ, 574, 634
Smith, P. S., Hall, P. B., Allen, R. G., & Sitko, M. L. 1992, ApJ, 400, 115
Stetson, P. B., 1986, PASP, 99, 191
Tavecchio, F., Maraschi, L. and Ghisellini, G., 1998, ApJ, 509, 608
Tanihata, C., Kataoka, J., Takahashi, T., & Madejski, G. M., 2004, ApJ, 601, 759
Tommasi, L., Diaz, R., Palazzi, E., et al. 2001, ApJ Supplement Series, 132, 73
Treves, A., Morini, M., Chiappetti, L., et al. 1989, ApJ, 341, 733
Urry, C. M., Maraschi, L., Edelson, R., et al. 1997, ApJ, 486, 799
Xie, G. Z., Zhang, Y. H., Li, K. H., et al. 1996, AJ, 111, 3
Zerbi F. M., Chincarini, G., Ghisellini, G., et al. 2001, AN, 322, 275
Zhang, Y. H., Xie, G. Z. 1996, A&A Supplement Series, 116, 289
Zhang, Y. H., Treves, A., Celotti, A., Qin, Y. P., & Bai, J. M., 2005, ApJ, 629, 686

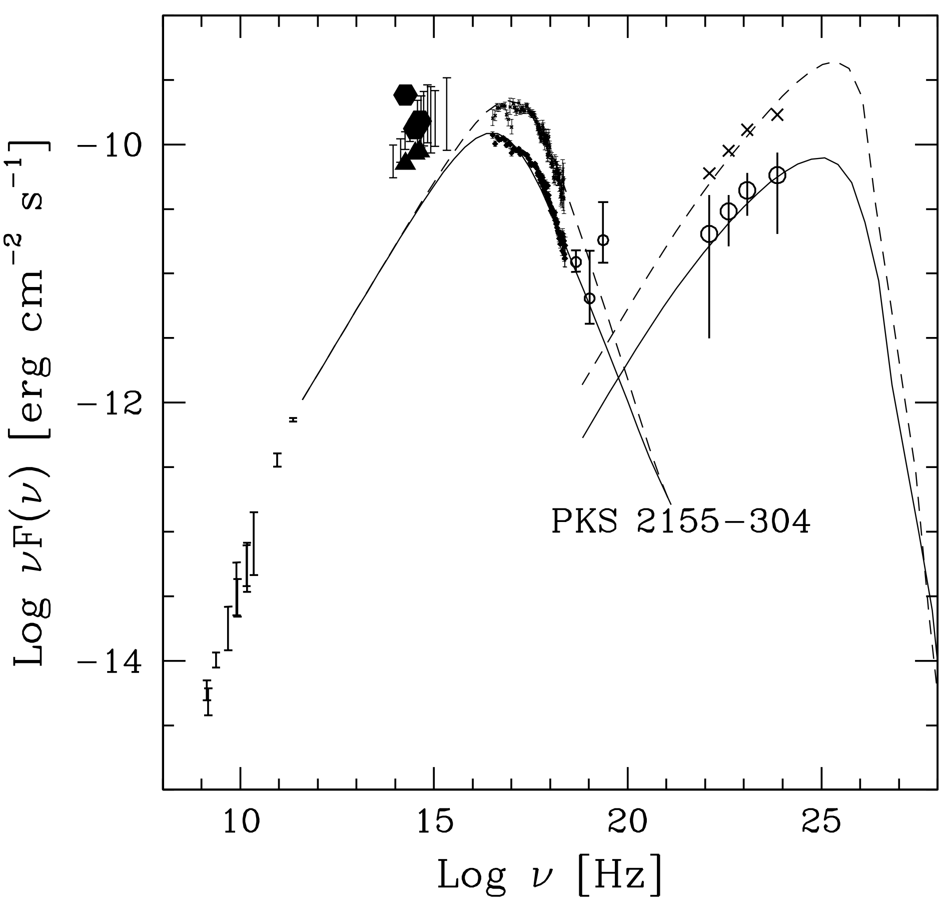

Figure 13. SED of PKS 2155-304 in two states, adapted from Chiappetti et al. (1999) (see the paper for details). Data from this work are also plotted. Filled triangles correspond to epoch **1** (13/5/2005 data), while filled hexagons belong to epoch **3** data (20/11/2005). Optical, UV and REM data are dereddened using E(B-V)=0.026 and parameters given by Cardelli et al. (1989).

Zhang, Y. H., Treves, A., Maraschi, L., Bai, J. M., & Liu, F. K. 2006a, ApJ, 637, 699
Zhang, Y. H., Bai, J. M., Zhang, S. N., et al., 2006b, ApJ, 651, 682